45

~~461~~

~~25-2-55~~

~~461~~

~~461~~

STATE [illegible] EDUCATION ★ BANIPUR ★

RECENT TRENDS IN EDUCATION

Edited by

T. K. N. MENON

Director, Directorate of Extension Programmes
for Secondary Education, Ministry of Education,
Government of India

In Commemoration of
the SILVER JUBILEE of
the Secondary Training College and
the Faculty of Education and Psychology, Baroda.

D/12
STATE INSTITUTE OF EDUCATION * BAN
S.C.E.R.T. W.B. Library Calcutta

ORIENT LONGMANS LIMITED
BOMBAY - CALCUTTA - MADRAS - NEW DELHI
AHMEDABAD - BANGALORE - HYDERABAD - POONA

ORIENT LONGMANS LIMITED
REGD. OFFICE: 17, CHITTARANJAN AVENUE, CALCUTTA 13
NICOL ROAD, BALLARD ESTATE, BOMBAY 1
36/A, MOUNT ROAD, MADRAS 2
KANSON HOUSE, 1/24, ASAF ALI ROAD, NEW DELHI 1
SHAHPUR ROAD, AHMEDABAD
17, WOOD STREET, SHOOLAY, BANGALORE
GUNFOUNDRY ROAD, HYDERABAD
373-74, NARAYAN PETH, POONA 2
Also at 17, NAZIMUDDIN ROAD, DACCA

LONGMANS, GREEN & CO. LTD.
48, GROSVENOR SQUARE, LONDON W. 1
And at CAPE TOWN, CROYDON (AUSTRALIA),
HONG KONG, NEW YORK AND TORONTO

379.54
MEN

© ORIENT LONGMANS LIMITED, 1961

First published: 1961

S.C.E.R.T. W.B LIBRARY
Date
Accn. No. 9620

PRINTED IN INDIA

BY RATAN N. NALLASETH AT R.M.D.C. PRESS, 70/71, WORLI ESTATE, BOMBAY 18 AND PUBLISHED BY G. D. STHALEKAR, MANAGER, ORIENT LONGMANS LTD., NICOL ROAD, BALLARD ESTATE, BOMBAY 1.

To

MY STUDENTS

who studied during 1935-1960 in
the Secondary Training College and
the Faculty of Education and Psychology, Baroda.

461

PREFACE

ADVANCE in Education has two aspects—quantity and quality. These two aspects have had their advocates throughout the history of educational theory and practice, from the days of ancient Greece, of Plato and Aristotle, to the twentieth century when educational thinkers of the excellence of Mahatma Gandhi and John Dewey flourished. No educator of any significance has pressed for mere expansion without regard to quality which alone can ensure standards. Similarly, advocates of quality have never failed to recognize the importance of education being made available to as large a number of children as possible. John Locke and the advocates of his disciplinary theory in education pleaded during the seventeenth century for a better quality in education because the emphasis at the time was on the inclusion of certain subjects in the curriculum which, it was contended, would give a formal discipline to the mind. Rousseau, in the eighteenth century, wanted education to be completely overhauled to give it a meaning and a quality, but his analysis of the social aspect of education did take into account the quantitative expansion of education to usher in a new society populated by "natural" men and women. The nineteenth century advocates of the psychological tendency in education—Pestalozzi, Herbart and Froebel—wanted a better deal in the quality of education with the child as the positive factor, but the humanitarian aspect of education practised by Pestalozzi and the Kindergarten founded by Froebel had also their bearing on more educational facilities to cater to the needs of all children. During the same century the scientific attitude ably put forward by Huxley and Spencer and the sociological trends preached and practised by governments and philanthropists had their focus on the quality and quantity of education respectively, though in either case the value of the one aspect was not stressed in disregard of the other. During our own times we have witnessed the sublime spectacle of Mahatma Gandhi formulating the programme of Basic Education to provide schooling for millions of children who did not have any education and his using at the same time its qualitative aspect to bring about a new social order rid of competition and strife and imbued with the spirit of co-operative fellow-feeling.

The present volume deals essentially with improving the quality of our education. It takes for granted that in Independent India, democracy will see to it that primary education is provided for all children of school-going age, and that secondary and university education will not be denied to those who can profit by it. Since educational expansion is now rapid and phenomenal in India where education had served only a limited purpose before Independence, the problem of maintaining standards has become very difficult. This problem has to be tackled from the points of view of better teacher preparation, school organisation, methods of teaching and evaluation procedures adopted to measure student achievement. It is our hope that the articles presented here will appeal to those who are engaged in these facets of the educational effort in which new India is engaged and upon the success of which depends not only the success of her Five Year Plans but also of her great experiment in democracy—an endeavour of great magnitude and complexity unparallelled in the history of mankind.

The contributions to this volume are made by some of the eminent experts in education drawn from India, the United States of America and the United Kingdom. The subject area of their coverage is large—indeed it is as vast as the areas of their specialisation. The variety of the subjects discussed and their importance will be evident when we realise that the contributors range from Dr. J. S. Brubacher, the famous American authority on educational philosophy and organisers of educational associations like Sir Ronald Gould and Dr. W. G. Carr on the one hand, to authorities on home science and English teaching like Dr. Mildred Horton and Mr. L. A. Hill, on the other. For the purpose of covenience and expediency the volume is divided into two parts, the first part dealing with new trends in educational philosophy and educational organization and the second with modern advances in the teaching of various subjects in the school. If there should be only one subject in the school curriculum and that is life, there should be only one approach in teacher preparation, namely, that the teachers should be prepared to help effectively in the natural, spontaneous and harmonious development of the growing generation so that they may become well-adjusted citizens. These articles, therefore, aim at giving a helping hand to those engaged in the education of our youth for the rich, warm and colourful life as it exists today and as it tends to undergo changes with the march of time. If the volume draws their attention and sets them thinking, it will have justified its appearance.

It was originally the intention to bring out this volume soon after the inauguration of the Silver Jubilee Celebrations of the Faculty of Education and Psychology of the Maharaja Sayajirao University of Baroda. My joining the Union Ministry of Education, Government of India, as the Director of Extension Programmes for Secondary Education and the heavy programme which is being worked in this context made it impossible for me to accomplish this desire.

I thank most cordially all those who have contributed to this volume. Some of my colleagues in the Faculty of Education and Psychology have helped me in a number of ways in getting this publication through. To them I offer my grateful thanks. I dedicate this volume to the hundreds of students whose professional preparation I was privileged to lead during the period of about quarter of a century. The exuberance of their enthusiasm and their deep devotion to duty have inspired me to work for a better education for teachers and thus for a better deal for the profession.

T. K. N. MENON

CONTENTS

PART I

Page

THE PURSUIT OF EXCELLENCE by J. S. Brubacher. ... 1

JOHN DEWEY AND MAHATMA GANDHI AS EDUCATIONAL THINKERS by E. P. Link. 10

TEACHER EDUCATION AND INTERNATIONAL UNDERSTANDING by D. J. Johnston. 18

ONE STUDENT by B. S. Bloom. 22

A NEW APPROACH TO EVALUATION IN SECONDARY SCHOOLS by K. Vedanta Chary. 27

TESTING IN ADVANCEMENT OF EDUCATION by Anna Dragositz 40

PSYCHOLOGY AND THE CURRICULUM by Dr. Theodore D. Rice and Chandos Reid Rice. 46

EDUCATIONAL PSYCHOLOGY IN TEACHER EDUCATION by A. P. Coladarci. 55

TEACHING OF EDUCATION AND PSYCHOLOGY IN TEACHER EDUCATION by M. Varma. 62

RESEARCH AND STUDY IN EDUCATIONAL PSYCHOLOGY by J. M. Stephens. 68

THE PROBLEM OF SELECTION by Rev. T. N. Siqueira. ... 77

ACTION RESEARCH TO IMPROVE INDIAN SCHOOLS by S. M. Corey. 86

BASIC EDUCATION by M. Sykes. 90

EDUCATION OF NURSERY SCHOOL TEACHERS by R. C. Smart. 97

RADIO IN SECONDARY EDUCATION by C. L. Kapur. ... 107

EDUCATIONAL ASSOCIATIONS AND THE PROFESSIONAL ADVANCEMENT OF TEACHERS by W. C. Carr. 114

EDUCATIONAL ASSOCIATIONS AND THE PROFESSIONAL ADVANCEMENT OF TEACHERS by Ronald Gould. ... 120

PART II

Page

THE SEVENTH ATTEMPT by Michael West. 129

TEACHING OF ENGLISH AS A FOREIGN LANGUAGE IN SECONDARY SCHOOLS by L. A. Hill 137

TEACHING OF MODERN EUROPEAN LANGUAGES IN SECONDARY SCHOOLS OF THE UNITED STATES by Theodore Anderson. 147

TEACHING OF MODERN INDIAN LANGUAGES IN SECONDARY SCHOOLS by D. M. Desai. 155

TEACHING OF HISTORY IN SECONDARY SCHOOLS by J. R. Reeve. 166

TEACHING OF GEOGRAPHY IN SEONDARY SCHOOLS by J. C. Parrack. 171

TEACHING OF SOCIAL STUDIES IN SECONDARY SCHOOLS by Jack Allen. 179

RECENT TRENDS IN THE TEACHING OF MATHEMATICS IN SECONDARY SCHOOLS by C. H. Brown. 184

RECENT TRENDS IN THE TEACHING OF MATHEMATICS IN SECONDARY SCHOOLS by K. R. Gunjikar. 192

TEACHING OF GENERAL SCIENCE IN SECONDARY SCHOOLS by R. H. Dave. 199

TEACHING OF TECHNICAL SUBJECTS IN SECONDARY SCHOOLS by H. R. Mills. 214

COMMERCIAL EDUCATION IN SECONDARY SCHOOLS by Inez Wells. 222

TEACHING OF HOME SCIENCE IN SECONDARY SCHOOLS by Rajammal P. Devadas. 236

A PROGRAMME OF HOME ECONOMICS IN TEACHER PREPARATION by Mildred Horton. 246

A PROGRAMME OF HOME ECONOMICS IN TEACHER PREPARATION by Treva Kauffman. 252

AGRICULTURAL EDUCATION IN SECONDARY SCHOOLS by M. K. Luther. 260

THE PURSUIT OF EXCELLENCE

by John S. Brubacher

THE *author of the Pursuit of Excellence is the world-famous authority on educational philosophy, Dr. John S. Brubacher who has been occupying for a number of years the chair of the Reuben Post Halleck Professorship of History and Philosophy of Education at the Yale University. Dr. Brubacher's* Modern Philosophies of Education, History of the Problems of Education *and* Higher Education in Transition *are authoritative and accredited treatises on the subjects. While writing these books, the author acted in an editorial capacity in compiling his* Eclectic Philosophy of Education *and also the* John Dewey Yearbook, *the* Public Schools and Spiritual Value. *He was also engaged in a similar capacity as Chairman of the 1942 and 1954 Yearbooks of the National Society for the Study of Education both of which dealt with philosophy of education. During World War II Dr. Brubacher was the President of the Philosophy of Education Society. Now on leave from Yale University, he is the Director of Connecticut's Four-College Study.*

Dr. Brubacher emphasises in the present contribution the need for the pursuit of excellence as a matter of imperative importance in the context of modern education, particularly American education. The author argues that quality and equality in education are not incompatible and the fear that the pursuit of excellence is inconsistent with democracy seems unfounded.

The pursuit of excellence consists, in the first instance, in the selection of the best people in terms of intellectual capacity. Since people have different abilities, it is but fair, just and democratic that those with greater abilities should have greater, not equal, opportunities. The pursuit of excellence is also an objective that should dominate the mind of every student regardless of his intellectual capacity.

The pursuit of excellence as an educational ideal finds support in all important educational literature and also in religion. And yet modern educational practice especially in America, stands in sharp contrast to the ideals. The author cites among the modern reasons for this three important ones. First of all the modern student knows that he can 'get by' without attempting to excel. Secondly there is the influence of the pragmatism of John Dewey and William James which instead of trying to make imperfect men perfect seeks to make imperfect men more comfortable. And thirdly there is the general academic apathy in higher education since the great majority of undergraduates are planning on practical careers rather than pursuing excellence as an end in itself.

It remains therefore to find a context in which the pursuit of excellence will yet have a vital meaning to the great majority of students. Dr. Brubacher is convinced that if the present crisis is to be averted and if the pursuit of excellence is to pervade schools and colleges, something must be done to stir the body politic as a whole because the present-day youth merely reflect a lack of sense of crisis in the public at large.

FOR long America has been proud of what is probably the highest standard of living in the world. In no small degree this standard has been due to possessing the world's most advanced technology. This technology in turn has reflected a very high level of intellectual competence which America would like to think stems from the best schools to be found anywhere. The more Americans have reflected on this sequence of thoughts the more confident they have become of their leadership. So content, indeed, have they become with themselves that they have developed a complacent smugness. Then occurred the launching of Russia's first sputnik. As it pierced the stratosphere so it also pierced the bubble of American complacency. Overnight it became evident that America might no longer be leading the technological parade and that, even if it still was, someone was breathing hot on its neck. Only a moment's reflection was needed to raise further doubts about America's educational leadership as well. If Americans had fallen behind technologically perhaps they had fallen behind educationally as well. If America was to catch up in the conquest of space its first effort would have to be educational and only secondarily technological. The pursuit of excellence in the intellectual realm has consequently become the absorbing preoccupation of American educators.

A glance at the immediate past of American education shows that its primary concern has not been with the pursuit of excellence. On the contrary it has sought to extend educational opportunities to the widest possible segment of the population. Obviously the wider this segment has enlarged since the last decades of the nineteenth century, the more mediocre have been the minds admitted through the portals of learning. Many of these minds have been quite incapable of meeting the exacting standards characteristic of the best institutions of higher education. The fact that they could not meet these requirements, however, has not persuaded the American educator to throw them on the social scrap heap. Rather than fail the mediocre student the American college and university have constructed curricula whose standards are within the competence of these students. Indeed, nowhere in the world has such an enormous effort been made to measure the curriculum to the abilities of the student rather than tailor the student to the curriculum. This has been justified not only on democratic and humanitarian grounds but on utilitarian ones as well. An advanced technological civilisation not only needs top level minds to lead but it needs minds of intermediate ability and cultivation to carry out the leaders' policies. To apply a military analogy, highly trained commissioned officers are most effective in leading privates when they have well educated non-commissioned officers in intermediate positions of responsibility.

Justified as America's preoccupation with the education of the mediocre may have been, many now think that it occurred at the expense or the neglect of the most highly talented. Without reverting to the colonial and early national policy of neglecting the mediocre, America is now renewing its ancient interest in the education of its best minds. It is trying to achieve both "quality *and* equality" at one and the same time. There are many, however, who think this cannot be done. Either a kind of Gresham's law operates to drive out the reemphasis on quality or excellence or, if the pursuit of excellence remains uppermost, it promotes aristocracy rather than democracy. The past fifty years is evidence enough of the former tendency. But the fear that the pursuit of excellence is somehow inconsistent with democracy seems unfounded.

No doubt the pursuit of excellence consists in the first instance in selecting the aristocrats, that is, the best people. Today, however, the measure of best is not that of birth or social position as of yore but of brains and intellectual capacity. These superior people must be be given a superior type of education. To do so, however, at once destroys any pretense at equality. Some compensate for the loss of a strict equalitarianism by taking refuge in the policy of giving all "equality of opportunity" in education. But if they will but stop to think they will see this is no real compensation or refuge. If people have different abilities, then in all fairness it would seem that those with greater abilities should have greater, not equal, opportunities. The concern of democracy here should be, not with equalitarianism, but with justice. A just education, Plato wrote in the *Republic,* is one where each individual is educated according to his unique abilities. If it appears that there is some incompatibility between the concepts of equalitarianism and justice, let us resolve it in favour of justice. The injustice of traditional or classical education was that it neglected to provide educational opportunities commensurate with the abilities of the mediocre. That injustice, as already seen, has largely been corrected in the past seventy-five years. The potential danger of injustice today lies in failing to give superior students superior opportunities. The pursuit of excellence today, then, may result in a certain unequal treatment of individuals but to fail to note the respects in which individuals are different and therefore unequal would result in manifest injustice.

The pursuit of excellence is not to be restricted to the selection of the students capable of excellent achievement. The pursuit of excellence is also an objective which should dominate the mind of every student regardless of capacity. Everyone should seek to excel in his studies in so far as in him lies. If excellent students are not dominated by this motive, their selection for superior opportunities will hardly be warranted. If the salt hath lost its savor, goes an old maxim, wherewith shall it be salted? Current American education is perhaps in as great danger at this point as it is in neglecting its talented. The excessive emphasis on equalitarianism in the past half century has undoubtedly lowered the level of achievement. As already stated, a kind of Gresham's law has operated. The more mediocre talent has been given educational currency, the more academic standards have dropped to the level of mediocrity. To raise the level of academic expectation to the highest standard is likely to be a far more difficult task than searching out the talented youth in the population.

To exalt the pursuit of excellence is a spiritual aim of no mean proportions and requires some analysis. There is no lack of support in our literature for the pursuit of excellence as an educational ideal. Cardinal Newman in his *Idea of a University* stated it as succinctly as anyone. "Liberal education, viewed in itself, is simply the cultivation of the intellect, as such, and its object is nothing more than intellectual excellence."[1] Why pursue intellectual excellence on its own account? Several reasons might be adduced. Socrates took the view, and apparently Newman did too, that knowledge is its own reward. Writing a few pages earlier Newman asserted, "What the worth of such an acquirement is, compared with other objects which we seek—wealth or power or honour or the conveniences of life, I do not profess here to discuss; but I would maintain . . . that it is an object, in its own nature so really and undeniably good, as to be the compensation of a great deal of thought in the compassing, and a great deal of trouble in the attaining."[2]

Aristotle took the view, clearly reasserted today by Mortimer Adler, that in striving for intellectual perfection the individual more fully realizes his potentiality for becoming a man. Such a conception turns on the metaphysical notion that the good is convertible with being, that anything has as much goodness as it has being. "Hence," Adler writes, "if a thing is naturally constituted by capacities to be developed, its ultimate good consists in their development, for thereby it has more actual being. Habits as developments of powers are perfections in so far as they increase and complete the being of the thing."[3] Intellect, he goes on to point out, is a case in point.

As if ethical and metaphysical reasons were not enough justification for the pursuit of excellence there are religious ones as well. The Christian Bible bids the reader "Be ye perfect even as your Father which is in heaven is perfect." The spirit of this injunction seems to come out in our day in the educational philosophy of Herman Harrell Horne. The ideal student, he says, seeks perfection.[4] Why does he seek perfection? Because the ideal person is perfect. Now such an ideal person or student, Horne confesses, may not exist in school or the society outside but the ideal nevertheless haunts the imagination of man. It has a reality all its own which subsists just as surely as do perfect circles in geometry. "Believing that such an ideal is real and that man can realize it is a great stimulus to improve actual conditions. Viewed in a large way, the mission of man is to make the ideal actual."[5]

---

[1] John, Cardinal Newman, *The Idea of a University* (sixth edition; London, Longmans, Green and Company, 1896), p. 121.

[2] *Ibid.*, p. 103.

[3] National Society for the Study of Education, Forty-first Yearbook. Part I, *Philosophies of Education* (Chicago, University of Chicago Press, 1942), p. 159.

[4] *Ibid.*, pp. 156-157.

Yet, in spite of these apostrophes to the pursuit of excellence, a certain academic apathy seems to pervade American high schools and colleges. And this condition does not result from a failure of the academic community to reward scholastic merit. The scholastic elite are elected to Phi Beta Kappa and to Sigma Xsi but these honors carry little weight in the scale of undergraduate values. Captaincy of an athletic team, editorship of the student paper, presidency of one's class generally outweigh academic achievement. To make the "dean's list" is usually prized more for its license to "cut" classes without penalty than as a badge of intellectual prestige. Students and the American public generally count social success greater promise of future distinction out of school than they do academic achievement. Why does our practice stand in such sharp contrast to the ideals which we have inherited from the past?

No doubt there are a number of reasons. I shall mention only three. In the first place there is prevalent the notion that one can "get by" without excelling. A very interesting instance of this thinking is to be found in the teaching of handwriting. Formerly students aimed to develop a graceful and artistic hand. But no longer. Now with the Thorndike handwriting scales the student aims to write legibly enough to communicate with others. That is, he learns to write well enough to "get by." The time he formerly spent on going beyond legibility toward perfection of his handwriting he now devotes to other studies. Obviously there is some merit to such an apportioning of time but just as obviously there is a subtle sagging of standards. If this sagging could be limited to handwriting it might be overlooked. But unfortunately it extends in many directions. Furthermore it is reinforced by the affluence, even opulence, of our standard of living. Our advertising continually reminds us of quick and painless ways to do things which formerly took time and caused fatigue. Because we have mechanical gadgets to reduce or even eliminate the drudgery of housework children seem to think that

---

[*] National Society for the Study of Education, Forty-first Yearbook, Part I, *Philosophies of Education* (Chicago, University of Chicago Press, 1952) p. 178.

there must be a quick and easy way to learn. No doubt learning can be made more interesting but there is nothing which can reduce its exacting nature.

There's an anecdote which further illustrates this first point. A farmer in one of the western states of the United States was urged to attend the agricultural college of his state university. "Why should I?" he inquired. To learn to farm better, he was told, to learn to rotate his crops, to learn soil chemistry, to learn about hybrid seed, and the like. In spite of these good reasons he remained unconvinced because, he said, "I don't even farm now as well as I know how." How long can a people "get by" on less than full effort?

In the second place our academic apathy is often ascribed to a basic anti-intellectualism in American life. This is no recent phenomenon. It has existed since colonial days. Under conditions existing on the western frontier in the eighteenth and particularly the nineteenth centuries Americans have preferred an education which, instead of trying to make imperfect men perfect, has sought to make imperfect men more comfortable. Such a pragmatic view is not difficult to understand. On the one hand it was the unpremeditated result of living close to nature, of subjugating the soil to cultivation and exploiting the natural resources beneath the soil. On the other hand, towards the end of the nineteenth century, this pragmatism became a deliberate way of life under the leadership of such men as William James and John Dewey.

The critics of pragmatism have indicted it for being the conscious philosophy of the "get by" attitude. This can clearly be seen by contrasting Newman and Dewey in their attitudes toward the role of intelligence in education and human affairs. Newman, it will be remembered, made the cultivation of intelligence an end in itself. Dewey, on the contrary, took a Darwinian view of intelligence and conceived of it as an instrument of survival in the struggle for existence. Confronted with the problems of a more or less hostile environment mind is a means of making adaptations. Instead of polishing it as a jewel, as Newman did, Dewey sharpened it as an instrument. It is small wonder that the pursuit of excellence became the educational objective of the one and the solution of problems the objective of the other.

This situation largely explains the third cause of academic apathy in American higher education. Most faculties consciously or unconsciously teach in the Newman tradition. This tradition is not only consistent with Socratic, Aristotelian, and Christian views but it also has an esoteric quality congenial to the professorial mind. Devoted to its field of specialization the academic mind derives aesthetic enjoyment in pursuing it. With this motivation of the academic mind there can hardly be a quarrel. But when the academic mind tries to impose this type of motivation on the general undergraduate mind trouble brews. No doubt a few undergraduates, probably the ones who are planning to become college professors, are capable of pursuing intellectual studies on their own account. But the great majority of undergraduates are planning on much more practical careers. When the faculty tries to impose its professorial stereotype on them, they tend to sabotage it by slumping into academic apathy. Certainly any one who is capable of pursuing intellectual excellence as an end in itself should be encouraged to do so. Perhaps there are more such than mediocre teaching brings out. But even at best they will be a minority. It remains, therefore, to find a context in which the pursuit of excellence will yet have a vital meaning to the majority, perhaps the great majority, of students.

This context, it seems, must be found in some specific situation. While a few can pursue excellence as an end in itself, the rest of us probably can only raise our standard of expectation beyond the "get by" level where we see that we can only "get by" with an all out best effort. Is there any such situation or context at present? The current contest with Russia *should* be such a one. Whether in barbaric terms of survival or civilized terms of conquest of outer space, nothing less than the pursuit of our most excellent best will be enough. The challenge of this contest should stir any student out of his current academic apathy. But, sad to say, it doesn't or, if it does, the impact is as yet slight. This is not the situation in Russia. There, if there is anything that recent accounts of Russian education agree on, it is that there is an impressive earnestness with which the youth pursue their studies. In part this earnestness is inspired by a competitive desire to overtake the United States in its standard of living and its technological competence. As sport conscious a country as the United States ought to be able to rise to such a challenge. But if it does, it is only in the most lethargic fashion. What is lacking? Is the current generation lacking in the spirit of its fathers? The frightening apathy is not that of the youth but of the adult generation. The youth merely reflect a lack of sense of crisis in the public at large. If the pursuit of excellence is to pervade our schools, something must be done to stir the body politic as a whole. One can't help but wonder whether a country with a controlled public opinion is more capable of rising to high educational endeavour than one which resists central control. Let us hope we do not have to be shocked into action by a national catastrophe.

JOHN DEWEY AND MAHATMA GANDHI AS EDUCATIONAL THINKERS

by E. P. Link

THE *author of this very refreshing chapter on* John Dewey and Mahatma Gandhi as Educational Thinkers *is Dr. Eugene P. Link who is the Chairman of the Social Science Division, State College of Education, State University of New York, New Paltz. Dr. Link was in India as a Fulbright Professor twice. His first assignment was in 1954-55 to the Annamalai University. During 1959-60 he was attached to the Faculty of Education and Psychology, Maharaja Sayajirao University of Baroda and simultaneously to the Vallabh Vidyapeeth, Anand. Dr. Link is the author of a book and a number of articles on American Social History. We are looking forward to the book on Indian Social and Cultural History on which he is at present working.*

Dr. Link traces here the story of American pragmatism and shows how John Dewey along with William James and George Herbert Mead have been its chief spokesmen. He compares Dewey's application of pragmatism to education with Gandhiji's Nai Talim and shows the close resemblance of both though the latter did not have any direct influence from the American philosopher. Both their pragmatic problems had the same question to answer, viz. "What system of education will work best for my people?" John Dewey landed on "learning by doing" and Mahatma Gandhi on "learning by living" or "education for life, through life and throughout life". In spite of their unrivalled value, neither has broken the samsara wheel of education whereby rote teachers perpetuate rote teaching.

The author points out that in spite of their great similarity there is one great difference between the two. Gandhiji laid stress on work; Dewey did not and herein Gandhiji is more realistic than Dewey because education in and through work would integrate naturally the physical and social situation of children. Dr. Link concludes his thesis by showing how the labour philosophy of education meets the needs of the East and the West in a number of ways.

IN SOME millennium in the pages of history yet to be written, a careful archaeologist will record the contributions America made to mankind. After cleaning a neon tube buried for three thousand years or probing a vial of phenobarbital tablets among other things, the scholar will assess the leading civilization of the first half of the twentieth century and write down its two or three gifts to man's development. What will these be? Political democracy on a wider scale than ever before? Respect for one's fellow man brought to the new height of treating everyone as "Mr." or "Mrs."? Will it be Emerson's transcendentalism with its idolization of the sacred individual? Or will it be the idea of the free public school and the educability of the masses? All these and others might be recorded by the erstwhile student of ancient history in the year 3000 A.D.

There is one attribute of American education which almost certainly will be listed because it has watered the roots of our American scientific "know how" and technology, and that is the pragmatic approach to life's problems. This literally has driven Americans to test the old ways against new ones, to question, to try, to experiment, to think inductively and to learn by active participation. No other civilization has been so thoroughly motivated by the question "What has to be done now?" rather than the comfortable and unimaginative procedure of copying the past. The dominance of this philosophy has nourished both the technological advance and the democratic lifeways of the United States. Almost certainly it will be remembered as a positive contribution to the long story of civilization.

Most historians accept the view that pragmatism was pushed to its apogee in America by several environmental factors. Not the least of these was the unique impact of the "westward movement" of a people on its thinking and acting. Perhaps Charles Beard, one of our famous historians, was right when he traced the western movement from the Middle East to Greece, Greece to Rome, from Rome to the Atlantic countries, from England to America, and finally the march across a vast and rich continent. The process of facing ever new situations, and making decisions accordingly, reached far back in the West, but came into full flower with the self-reliant pioneer in America.

With his hoe, rifle and his axe the frontiersman learned to bring nature under his control by actually "doing it." Too far from the established centers of control, he was thrust upon his own resources; he had to make his own decisions; and he learned by trial and error. There was no letting "George do it", or ordering servants to do this or that. Every man and woman and child had to work long hours to reap the bounties of nature and to attain some degree of security from want and fear. Thus, hands and faces were tanned and weatherbeaten and the palms were scarred and calloused. Each man farmed his own land, repaired his own machinery, doctored his own animals, milked his own cows, and learned to be a better farmer because he himself sowed, ploughed, reaped. Even when farm "hands" were available, the owner coninued to labor in the fields with his "hired man", working as hard or harder and getting as dirty and sweat-bathed.

This social matrix, doing for oneself and learning thereby, gave rise not only to America's breadbasket, West successfully feeding industrial Europe and America, but also to a philosophic position—a philosophy of life known as Pragmatism. Its chief spokesmen were William James, George Herbert Mead and John Dewey. Their philosophy of action stands vis-a-vis all the old theories and methods of deductive thinking which sometimes hold so tenaciously to the minds of men.

Just as the child sticks his hand for the first time into the lighted candle and jerks it back, the child is changed and so is the candle, likewise Americans have learned better than some other nations, so far, that experience is the best teacher; it alone educates us by changing our behavior. All the older system of East and West, of learning by rote, of facing threats of physical punishment, and the psychological chastisement of low grades or failed examinations, are now openly challenged and questioned. Americans have believed in man's inherent right to test, to try, to experiment, and to present one's findings and conclusions even though imbedded superstitions of the past were challenged. By technical achievement and scientific progress against suffering, disease and ignorance, America has validated its major philosophical position. It will be a part of her immortality.

John Dewey who systematized the pragmatic outlook, has made an impact on education around the world. If not fully accepted in many countries, this philosophy has left indelible impressions and changes. Where lectures, memorization of text-books, and examinations are in vogue, they are not carried on without a touch of guilt feeling and a ready desire to rationalize their use. India is a case in point. Here one may still see the older system with children crowded along benches, forty to fifty to a room, in various degrees of distraction and boredom, as the teacher in front recites off finalities to be remembered. For the most part, in the colleges the students have little regular academic work, either physical or intellectual, and are left to a few lectures and in the last weeks of a term, a frantic memorization of books mentioned in the syllabi. They must pass the all important terminal examination.

Or one may see the sharp contrast in another way. In the faculty quarters of an Indian University lived a professor of Engineering who had his training in England. Properly and trimly dressed, his textbooks under his arm, he walked to his class each morning with great dignity and a dash of pomp. He read and lectured from his sacred books as his students sat quiet and questionless.[1] His neighbor, also a professor of Engineering, was a graduate of the California Institute of Technology. He left each morning clad in work clothes. His students were involved in a process of testing pre-stressed concrete beams (a great need in India). His finger was bruised by an accident as he and the students worked. He returned in the late afternoon dusted with cement powder to relate how hard his students worked on their scientific trials and discoveries. In these two professors, in the same department, the old and new in education stood out dramatically.

In still another way, however, India reveals the struggle between the traditional, vested "wisdom-for-somebody-else, to-be-learned-by-all-youth" school and the pragmatic, scientific school. The challenge to orthodox education came, this time, from the Father of modern India, Mohandas K. Gandhi, who was quick to note the inadequacy of ancient educational practice for the rebuilding of his country. There is little evidence that Gandhi whose Nai Talim so much resembled Dewey's system, ever had direct influence from the American philosopher. Friends who knew the Mahatma well say his mind was stimulated by his experiences in the frontier-like South Africa, and by his work with the Tolstoy farm educational project there. Most of all, perhaps, he was faced with the immediate realization that something "practical" must be done to "lift" the masses of India, directly and as quickly as possible. Thus both men's pragmatic problem was, "What system of education will work for my people?" Both, then, came up with methodologies far more alike than different.[2]

---

[1] No Anglophobia is intended, whatsoever, in drawing this contrast, England has been a sincere propagator of its system which she herself is abandoning in the technological age. Some English educators feel the "activity method" has penetrated their elementary schools more extensively than it has the American school. Further, the author is fully aware of Britain's scientific achievements and her world leadership in jet propulsion.

A cliche which summarized the system of John Dewey was that children "learn by doing." Here was revealed, in this often too readily used phrase, the social background and context of American experience. Obviously, to proponents, America had advanced by self and group doing so that education should be placed upon this pragmatic base. Schools took up various activities, sometimes called the "project method" or the "problems approach" or "the child-centered school"—all meaning that the teachers were guided by the students' immediate questions and concerns. By whatever name, the activity program in which pupils were exploring, trying, making and doing, and out of it all, with teacher guidance, evaluating their experience and forming guiding hypotheses to better relate themselves to the natural and social world around them, was the essence of the well managed "progressive school."

Still other cliches are in vogue in India to summarize Gandhi's point of view. "Learning by living" is one, and another is "learning while earning." Today the most popular characterizing phrase is "Education for life, through life, throughout life." Just as Dewey would affirm, so the Nai Talim of Bapuji was that education is best when it is an orderly process of living and growing, by activities related to the child's immediate social and natural environment. Dewey's and Gandhi's goals for their vitalized education were essentially the same. In the latter's words these are: Self-reliance (the development of personality), Self-government (the respect for democratic procedure) and Community Living (responsible behavior with concern for others well-being). Both educators advanced the important idea of relating activities of the children with broader learnings and intellectual concepts. The Eastern sage termed this technique "samavaya", although his adherents have adopted the less adequate word "correlation".[8] The Western pragmatists use the word "integration".

---

[2] Persons impressed with Gandhi's mysticism will tend to question this statement, urging that his goals were idealistic and not pragmatic. The author is not convinced that Gandhi was so religious, in the usual sense of the word, as the orthodox wish to make him. But goals aside, the two methodologies are strikingly similar.

A closer analysis reveals that both schemes demand a skilled and imaginative teacher who can relate immediate experiences and interest to larger ideas and generalizations of which the particular is a part. It is at this point, incidentally, that the Achilles heel of both systems of education is to be found. Neither has broken successfully the samsara wheel of education whereby rote teachers perpetuate rote teaching. Too many exponents in both India and America voice all the learned phrases "learning by doing", "meaningful experience", "correlation", "learning while earning"—and, because of social inertia, of ineffectual teacher training, and of rigidity of the traditional school situation are utterly unable to put them into practice with children. When a "Gandhian teacher" curtly orders a student who interrupts the lecture with a question to "sit down and wait until students are permitted to raise comments" the problem is crystal clear. This teacher in America or India is following Dewey and Gandhi in name only. Sending out such teachers from training institutions East and West do irreparable harm to a sound educational philosophy.

Withal these likenesses between Basic Education and American progressive education there is one dramatic and profoundly important difference between the two. Gandhi laid *stress upon work.* Dewey did not. The former emphasized the opportunity to learn while working, to appreciate the sources of daily bread, and to feel democracy in action through the fellowship of labor. By processes of productive work children could learn about their natural surroundings and their societal matrix in all its complexity. Education in and through work would integrate naturally the physical and social situation of children. Herein, Gandhi is more realistic than Dewey. Both recognized the value of activity for real learning, but the former began with work, the production of basic food, clothing and shelter.

---

[8] Gandhi used the Hindi word "samavaya" (putting together) which expresses orderly unfolding and relating of experiences better than either "correlation" or "integration". It means, in other words, the idea of learning arising from the environment and leading on to recognition and appreciation of the broader implications of the local and specific experience. Although "correlation" is used widely among Basic Educators, it is not so well chosen because it suggests the relating of two bodies of information; viz., a syllabus of Indian History and one on Indian Art.

The ramifications of founding education upon useful, unexploited labor by children is important both for India and the United States. Perhaps the need for such an approach is different for each country. In America children ask the teacher, "If cows give milk, do gentlemen cows give buttermilk?" and "Teacher, when you milk a cow does that mean that you get milk from the cow or give milk to the cow?" American children need to know the where-with-all of their livelihood in order to give setting and meaning to their lives. Indian children need to know for almost necessary economic survival or for economic advancement and adjustment. This kind of knowledge for both countries is necessary for the preservation of society and of the security of the individual.

Also in developing India and in highly developed United States children should participate in *necessary* work. They need to be aware that all people are human beings and as such must be responsible for their personal contribution for the daily on-going of life. Responsibility for cleanliness, for preparing and serving food, for participation in the governing of themselves, for contributions to the well-being of their community, such things all children should feel and do. Work-centered education teaches democracy by actions, not words.

Useful work brings a knowledge to the active participant that is not discovered by those who issue orders only and who consider themselves far above "menial labor." The best farmer feels the texture and the wetness of the soil between his fingers. The best school principal, who has respect for his teachers and is respected by them has taught children himself. The best factory manager, the best foreman, work along with those responsible to them and can "show them how." A system called "multiple management" in America has just this idea. It encourages every workman to make suggestions to his supervisor about ways in which factory tasks are carried on. Accordingly, production costs have been lowered, output increased, and morale strengthened.

Foreman, farmers, principals who know their jobs from the "ground up" and who have learned to listen to others and respect their judgements have effective social organization. So children learn most in a school that offers them opportunities to learn from the "ground up" and to appreciate the combined abilities of many persons.

The labor philosophy of education, then, speaks to the needs of the East and the West in at least four ways:

1. Children learn facts (information) best when the facts are in a social context. The closer the relationship to their daily lives, the better the learning situation. What could be closer than the need for food, clothing and shelter? Thus spoke the Mahatma.

2. Democracy is a process, a "doing". We learn that the sweeper knows best how to sweep when we join him or her in sweeping. We know the problems the school janitor faces when (to use a phrase from social psychology) we "put ourselves in his position." Children need this respect for work and the worker.

3. While identification with work and worker brings respect and wisdom, equally so, it releases the power of the "we group" for reciprocal learning. While we learn from those working for us, we also teach in the scientific way known to educational psychologists. Dewey and Gandhi stood together here.

4. Class and caste lines, both oriental and occidental, cannot survive in a society whose education is founded upon all children sharing in some way in useful and necessary labor. How well the far-seeing Gandhi knew this.

Sarvodaya, the word used by Gandhiji, seems to convey the essence of his work philosophy and to suggest its fullest impact. Literally it means "the complete whole unfolding." In application the Founder of free India, taking an idea from Ruskin, meant that a just, peaceful, socialist and democratic social order could be achieved only by the inclusion of all the children of men, unto the apparent least. Thus the complete whole would unfold, the progress of all. Certainly John Dewey would have concurred. His democratic pragmatism underlined the importance of including "the least", and all concerned, in thinking through problems and in arriving at shared decisions. Stressing the "work school" over and beyond the "activity school", the sage of India made more straight the road that both philosophers were indicating as the highway for their nations towards a better tomorrow.

TEACHER EDUCATION AND INTERNATIONAL UNDERSTANDING

by D. J. Johnston

PROF. D. J. JOHNSTON, *the author of* Teacher Education and International Understanding *belongs to the galaxy of educationists on the staff of the University of London Institute of Education. Prof. Johnston has contributed substantially to the cause of teacher education and international understanding during the years he has been working on the executive committee of the Association of Training in Colleges and Departments of Education, England. During the last three years Prof. Johnston has worked as the Secretary-Treasurer of the International Council on Education for Teaching which offers tremendous possibilities of international co-operation through teacher education*

The author refers in this chapter to the many points of growth and development in the teaching of international understanding during the past ten or fifteen years, like the exchange of pupils or students, as well as teachers and lecturers between countries, removal of traces of national prejudice in text books in common use in schools, modification of prevalent techniques and syllabuses and the direct teaching of international understanding. The rôle of those engaged in teacher education to foster international understanding has been the most significant and the author cites the pertinent example that many of the remarkable results of the fundamental education programme of UNESCO derived their main impetus from those distinguished Professors of Education in Teachers Colleges who devoted themselves to this particular kind of work. Reference is made to the invaluable work of the World Confederation of Organisations of the Teaching Profession, that teachers' world parliament which was started after the end of the second world war, and to the recent contribution of the International Council on Education for Teaching. Prof. Johnston concludes with a description of the special areas in which it is easy to make substantial progress to develop the global point of view and where teachers could communicate to their children the thrill and enjoyment of being citizens of the world.

THERE have been many points of growth and development in the teaching of international understanding in the past ten or fifteen years. Some general reaction to the holocaust of war led many teachers and trainers of teachers to a position from which it was possible for them to review not simply the damage done to education by war, but also the positive work which education could achieve to make its contribution towards the elimination of war. In some cases this has consisted of something as simple as the exchange of pupils or students, as well as teachers and lecturers, between countries; in others it has led to the quite difficult but important task of removing traces of national prejudice in text books in common use in schools, as well as in films and radio programmes. On the whole, although the students in Training Colleges and in University Departments of Education, have, in general, been, throughout the world, more willing to accept an international point of view, and to reveal an international outlook, than in the pre-war generation of students, it has been obvious that the major direct steps taken to teach international understanding have been found in the schools where teachers have sought both to modify existing techniques and syllabuses, and also to take direct action to teach international understanding.

Those engaged in the education of teachers were naturally not slow to see the importance of this new development, and to add their own professional and intellectual support to it in some cases. Because of the range of experience of those already engaged in the training of teachers, they were channeled off from teacher education in their own countries, and became prominent in the more formal developments in international understanding, brought about by the creation of UNESCO and its specialised agencies. For example, very many of the quite remarkable results of the fundamental education programme of UNESCO, derived their main impetus from those distinguished professors of education and lecturers in Teachers Colleges who were encouraged to devote themselves to this particular kind of work. Meanwhile, in Europe especially through voluntary associations, and particularly through the planning of various national commissions of UNESCO, teachers and lecturers combined to form leading committees, which met from time to time on a two nation basis to explore the dangers of national prejudice and its dissemination through uniformed and traditional text book generalisation. In one quite remarkable field educational administrators, both from the Ministry of Education and from Local Authorities, combined with principals and lecturers in Training Colleges, and teachers in schools, to consider the special responsibility for German educational reconstruction. The voluntary body so formed, supported by German Ministries and colleges, led to a most extensive exchange system of principals, lecturers, professors and students, between universities, colleges and schools in the two countries.

What, before 1939, might have been thought to be a quite impossible development, was finally achieved within a few years after the end of the war by the creation of the World Confederation of Organisations of the Teaching Profession. The Teachers World Parliament with a string of annual meetings in Washington, Oxford, Oslo, Istanbul, the Philippines, Frankfurt, and so on, is a remarkable demonstration of the degree to which teaching for international understanding has achieved through the professional organisations of teachers in eighty, or so, different countries, a degree of understanding and tolerance unrivalled by the schemes of either UNESCO or U.N. At a later date, in 1953, a serious attempt was made to create a World Organisation for those engaged in the training of teachers. The first meeting was held at Oxford on the occasion of the WCOTP Congress, and led to the formation of the International Council on Education for Teaching. This early meeting revealed all the problems to be encountered in seeking to organise an international organisation whose members are engaged in teacher training.

Those responsible for the education of future teachers comprise, in every country, a very small proportion of the whole teaching profession. In most countries of the world there is also a substantial professional difference in outlook and academic qualification, between those training teachers for elementary or primary schools, and those training teachers for secondary or higher education. Moreover, in many countries the absence of a national organisation of teacher-trainers only added further to the difficulties of organising the trainers of the world's teachers on an international basis.

In 1959 further steps were taken at conferences held in London and in Washington to consolidate the bases on which rests the International Council on Education for Teaching. The Council is producing a brochure on education for teaching, to which contributions have been received from colleagues in about twenty countries.

Concurrently with these organisational developments, there has been a drive, helped by the Director General of UNESCO himself, to encourage teacher training in all countries to absorb some of

2461

the enthusiasm shown in the schools in support of the major project of teaching international understanding, and of the more recent work on East-West understanding.

There are obviously special areas in which it is easy to make substantial and measurable progress in introducing international understanding into courses for future teachers. Europe is a relatively compact field if one makes use of modern transport facilities. Similarly, both North and South America, individually and collectively, afford ample opportunities for the organisation of international activities for teacher-trainers and their students. In much the same way, the British Commonwealth, the Colombo Plan, the Warsaw Pact, etc., provide excellent starting points for bringing together the trainers of teachers.

While much can be achieved by precept in this field, much more tangible results follow from practice. Talk about other people, even on film, radio or television, all great aids in this work, is ultimately less important than direct contacts.

While one can tinker with the curriculum of those institutions in which teachers are trained, and one may even succeed in adding a subject to the timetable, called International Understanding, this is ultimately less valuable than irradiating the whole of one's work in every field with the spirit of tolerance and understanding. By indirect, as well as direct modes, the future teachers of the world can be encouraged to develop the global point of view.

It is very heartening to discover that, as the nations of the world move closer together in understanding, so, too, those who are helping to produce the next generation of teachers are doing their utmost to enable those teachers to communicate to their children the thrill and enjoyment of being citizens of the world.

S.C.E.R.T. W.B LIBRARY
Date
Accn. No. 9620

S.C.E.R.T. Library

ONE STUDENT

by B. S. Bloom

DR. BENJAMIN S. BLOOM, *University Examiner and Professor of Education of the University of Chicago is well-known to secondary school and university teachers in India as the author of the new approach to evaluation of student achievement and consequential reforms in examinations. Like Herbert Spencer who for assessing the value of subjects in the curriculum formulated the fundamental question—Of what use?—Dr. Bloom in evaluation would ask the teacher—What are the objectives in teaching a subject? He would link the worthwhile objectives with methods of teaching which should provide appropriate learning experiences to the pupil, and evaluation will be the last step to find out whether the objectives have been achieved in the behavioural changes of the taught. Though Dr. Bloom may meet with opposition today at the hands of conservatives in the educational world—Rousseau and Spencer did meet with similar opposition during their times—his novel approach to evaluation and examination is bound to prevail in the long run.*

Dr. Bloom here discusses the difficulties of getting the Indian teacher to appreciate the new approach to evaluation of student achievement and examining procedures. Teachers complain that they are not free to think about new ideas in education since the syllabus and examinations determine what they should do. The famous examination expert shows with convincing illustration that if we could get away from education as an institutionalised process to education as a highly personal process, if we start with the fundamental process of ONE teacher helping ONE student to learn something which is important to the teacher, the student and the nation, we might be able to understand better the power of a purposive educational process in which objectives, learning experiences and evaluation are seen in their proper relationship. Such thinking can then return to the realities of institutionalised education and still retain with some modification the essence of this irresistable relationship which will be true in the education of one as well as many students in India.

IN some of the seminars with secondary school teachers in various parts of India, I frequently found it difficult to adequately exchange ideas with the teachers. Each effort would somehow fail. My attempts to discuss educational objectives, learning experiences, and evaluation methods with the teachers seemed to them abstract and technical and they failed to comprehend the relation between such ideas and their work as teachers. Over and over they would point out that they were not free to think about new ideas in education since the syllabus and the examinations determine what they must do. Sometimes they would complain that these ideas were all well and good in a highly developed industrialized nation but that such ideas had little to do with the problems of education in a country like India where teachers are poorly trained and underpaid or where facilities are poor and classes large.

I finally took my cue from the reference to large classes. Perhaps if we could get away from education as an institutionalised process to education as a highly personal process we might be able to begin to understand each other. We began to talk about just One student. Sometimes it would be a real student whom the teacher knew, sometimes it would be an abstract single student.

"Let us imagine," I would say to a physics teacher, "that you have only one student to teach. What would you want him to learn?" At this, the teacher would tell me that he would want the student to learn about heat, light, motion, etc. I would probe further by asking just what the teacher meant by learn. "He should learn the facts and principles of physics but he should also be able to think in and with physics," the teacher replied. Question after question resulted in a list of the kinds of learning (educational objectives) to be achieved by our one student. He should be able to apply principles to explain new phenomena, he should be able to plan new experiments, he should be able to use laboratory equipment, he should be able to interpret experimental data, and he should be able to read and comprehend new developments in the field of physics. From time to time, we would discuss exactly what the teacher meant by each objective with many illustrations to make clear the exact meaning of a phrase like "apply principles." We also spent some time determining why these objectives were important in view of the nature of modern physics and the needs of present-day India for persons who can think scientifically and who can use science to improve the environment in which they live. But much of our discussion centered on the previous experiences and background of our one student and the kind of qualities he would need to live in a rapidly changing India.

From a discussion of educational purpose, we invariably turned to a consideration of the kinds of learning experiences which the physics teacher wanted our one student to have. "Would you lecture to him?" I asked. "How foolish," was the reply, "To lecture to our one student would be a great waste indeed." "Then how would you teach him," I queried. "I would pose problems and have him read books to find the answers, I would have him read books and I would ask him questions, we would go into the laboratory and use the apparatus to answer questions." Over and over again, the emphasis was on the student's activities—not the teacher's.

"How would the student learn to apply principles to new problems," I would ask. "Well, first he should understand the principle thoroughly, by reading about it, by performing certain experiments, and by answering questions about it," replied the teacher. "Is that all?" I inquired. "No. Then he should be given new problems and asked to solve them by applying the principles he had already learned. Finally, he should be able to see problems in his daily living, to formulate these problems in a careful way, and then solve them with the appropriate principle," the teacher told me. Frequently, we went from these rather general descriptions to a detailed discussion of a particular problem or a particular principle.

It was clear in all this that the teacher was thinking in terms of very specific activities on the part of the student and that each learning activity was purposive and directed to a particular kind of learning outcome. Each experience was intended to develop some aspect of the student's thinking, knowledge, and skill. The instructor was continually asking himself what would be the most effective way for the student to learn the subject matter and to develop kinds of educational outcomes or objectives he believed to be important.

Since I was especially interested in evaluation, I asked the teachers many questions about how they would examine our one student. "I would watch the student attack a problem in the laboratory." "I would ask him questions to determine if he understood and remembered what he had read or what he had heard me (the teacher) tell him." "I would question him to determine whether he had understood what he had done in the laboratory." "I would ask him to write a paper on an experiment or on observations he had made." "I would put new problems to the student and would note how he attempted to attack them." The teachers were as much interested in the methods and process the student used to attack problems as they were in the accuracy of his answers. They wanted to use many different methods of examining the student and did not want to depend on one technique of examining to the exclusion of all others. They wanted to use the examinations to motivate the student but they also wanted to use the results of the examination to determine what further learning experience the student needed.

Our discussions of examinations gradually became more detailed with the teachers producing examination questions intended to determine whether our One student had developed the kind of knowledge, thinking, and skills which were included in the educational objectives. We found more effective ways of asking questions and posing problems, but we always kept in mind the educational outcomes desired for our One student.

After we had explored educational objectives, learning experiences, and evaluation procedures for our one student, we considered the adaptations that would be necessary if we had 10 students, or 30 students, or even 50 students in our classes. In some cases it was clear that some objectives could not be achieved if we had large numbers of students (instead of our One student). However, in most cases increased numbers of students made for increased difficulties, but did not provide unsurmountable obstacles to new educational objectives, effective learning experiences, or more appropriate evaluation procedures.

It is clear to me that the secondary school teachers of India are working under real hardships. It is also equally clear that these teachers are as imaginative and creative as teachers anywhere else in the world. What is needed to begin this new thinking is to strip education of all of the institutional trappings and return to the fundamental process of one teacher helping one student to learn something which is important to the teacher, the student, and the nation. This thinking can then return to the "realities" of institutionalized education and still retain, with some modification, the power of a purposive educational process in which objectives, learning experiences, and evaluation are seen in their proper relationship to the One as well as the Many students of India.

BIBLIOGRAPHY

A Taxonomy of Educational Objective, edited by B. S. Bloom, Longmans, Green, and Co., New York, 1956.

Bloom, B. S. and Others, *Evaluation in Secondary Schools*, The All India Council for Secondary Education, New Delhi, 1958.

The Fifth Mental Measurements Yearbook, edited by O. K. Buros, The Gryphon Press, New Jersey, 1959.

Furst, E. J., *Constructing Evaluation Instruments*, Longmans, Green, and Co., New York. 1958.

Remmers, H. H. and Gage, N. L., *Educational Measurement and Evaluation*, Harper and Brothers, New York, 1955.

A NEW APPROACH TO EVALUATION IN SECONDARY SCHOOLS

by K. Vedantha Chary

MR. K. VEDANTHA CHARY, *the author of* A New Approach to Evaluation in Secondary Schools *belongs to the senior teaching staff of the College of Education, Osmania University. He was selected by the Association of Training Colleges in India for studying modern techniques of tests and measurements in the U.S.A. and the Ministry of Education, Government of India deputed him for this training under the T.C.M. Programme. Later he worked for three years as an Evaluation Officer in the Examination Reform Unit of the All-India Council for Secondary Education.*

Mr. Vedantha Chary who is one of our early experts on examination reforms gives here a clear analysis of the problem and discusses issues involved in the correct approach to evaluation in secondary schools. He points out that the crucial issue in evaluation is the assessment or judgment of achievements of pupils as a consequence of our efforts to educate them. And these achievements in any sound programme of education are of two categories, viz. academic-cum-intellectual and psychological-cum-sociological. Mr. Vedantha Chary distinguishes between the assessment of both these important and inescapable purposes of education and offers very valuable suggestions for the assessment of academic as well as psychological types of abilities. Provision of necessary opportunities and learning experiences should be the common and most important factor in our approach to teaching methods whether we are aiming at cultivation of academic type of abilities or at the psychological and sociological types of behavioural changes. The author points out quite pertinently that what matters more in the evaluation of the academic type of abilities is not the use of particular type of questions like the essay or the new objective type, but the framing of questions with a view to testing the desirable abilities with reference to the analysis of objectives in teaching a subject. The author exhorts the Indian secondary school teacher to make a beginning for evaluating the psychological traits of pupils by maintaining cumulative records as objectively as possible.

EVALUATION—*Its Broader Implications:* The term 'Evaluation' could be identified with three broad phases of objectives in the field of education namely,

(i) Evaluation as an end of education of an individual in general;

(ii) Evaluation of standards being maintained by an educational institution;

(iii) Evaluation as a procedure and means of assessing the educational achievement of pupils.

As an end of education in general, evaluation aims at developing among students the abilities of correct judgment in a given situation with regard to internal as well as external evidence or criteria. In other words, pupils as a result of their education must be able to judge an evidence properly in and outside the school situation. In terms of academic training, this ability might include in its scope aspects such as judging the precision of a given statement, examining its internal consistency and relevance to a given situation, comparison of statements, results, principles or theories etc. Evidently such an objective of education follows from the other important objectives concerned with gaining mastery in knowledge, comprehension, application, analysis and synthesis. Each of these abilities requires to be carefully attended to before an individual could utilise them for purposes of evaluation or judgment of a situation. Evaluation, therefore, becomes the final goal of all educational objectives.

Evaluation, as a means of assessing the academic and administrative standards of educational institutions, concerns itself with aspects such as the provision and selection of the teaching personnel, relationships among the staff and also between the staff and the outside community, nature of policies and plans being followed, provision of supplies and equipment, provision of funds, conditions of effective work and other similar considerations. Their importance could be assessed only relatively because the main factors around which they all centre are the achievements and behavioural developments of the educands.

The Crucial Issue: We, therefore, naturally come to the third phase of the concept of evaluation, mentioned above, namely, assessing or judging the achievements of pupils as a consequence of our efforts to educate them. This is the crucial issue. It demands an inclusive approach and raises four problems namely,

(i) What types of abilities should be expected of students as a consequence of their educational achievement and development?

(ii) How are we to arrive at them?

(iii) What kind of approach would be necessary to enable the students attain the desired abilities or behaviours?

(iv) How are we to test the effectiveness of our approach as to whether the desired goals have been achieved by students?

In what follows, an attempt is made to clarify some of the details concerning the above questions from a practical point of view.

Two Categories of Abilities: The nature of abilities or traits intended to be developed among students in our secondary schools could be varied and numerous. It would, therefore, be convenient to classify them under two broad categories, namely academic-cum-intellectual and secondly psychological-cum-sociological. The academic type of abilities are the direct concern of teachers to be borne in mind while teaching or assigning tasks to students with a view to develop in them qualities like comprehension, critical analysis, application of knowledge, knowledge of specifics and universals, manipulative abilities and skills and so on. They are fairly objective in essence and lend themselves to paper and pencil type of testing procedures. But the other class of abilities of a psychological or sociological character such as courtesy, co-operation, leadership, dependability, self-confidence, resourcefulness etc., are mostly subjective. The evaluation procedures for such traits will have to be different from the procedures that are generally possible in the case of the academic type of traits. Moreover, while the psycho-sociological traits could be regarded as the greatest common factor running through the total educative process of an individual, the academic-cum-intellectual abilities receive their relevance and significance purely with respect to the subjects of study and the stages of mental development of pupils. For instance, an ability such as 'observation of nature' or 'manipulative skill' might count as important and highly significant so far as the teaching of a subject like Physics or Biology is concerned. But when we come to the question of language teaching, this very ability becomes comparatively insignificant and perhaps even irrelevant. Similarly an ability such as 'appreciation of the beauties of a language' might be regarded as essential in linguistics at an advanced stage of mental development but not so while dealing with younger minds. The case is, however, different when we think of the other category of traits. Courtesy, co-operation etc., for instance, have a common relevance through all the mental growth stages of pupils although their standards of expectation might vary from stage to stage. Besides, their desirability is an accepted fact irrespective of courses of study. They are the indirect but essential ends of teaching any subject at any stage. Therefore, considered from the point of teaching the different subjects of the curricula, the academic-cum-intellectual traits require a differential and more careful approach as compared to the psychological aspects of behavioural development, mentioned above.

Arriving at the Academic Types of Abilities: Let us now take up the question of arriving at these abilities. We may have to deal with each of the above categories separately. How are we to arrive at the abilities concerned with the academic-intellectual aspects of students' achievements to begin with? A close and comparative scrutiny of the following sources is generally recommended:

(i) Nature of the contents of the curricula and the outcomes expected thereof;

(ii) Deliberations of subject specialists. These deliberations receive justification from their long standing experience of teaching the subjects concerned;

(iii) Information about students concerned, their attitudes, interest and levels of mental development;

(iv) Analysis of different question papers set by examiners at the different stages of instruction.

(v) Scrutiny of text-books, prescribed books etc;

(vi) Consideration of life needs and demands on students. What they are expected to achieve or perform and what kinds of problems they are required to face, must be given careful thinking under this source with respect to different courses of instruction.

The main target, however, in arriving at any desired abilities or purposes of teaching a subject would be the individuals whom we are training. Since we have to be quite practical in our approach, we will not remain contented with formulating only certain broad purposes, such as developing 'reasoning ability', 'powers of observation', 'ability for correct expression', 'application of knowledge to everyday situations', 'comprehension', 'scientific attitude', and so on which are no doubt very reasonable and relevant. Besides formulating such broader goals we shall have to analyse them further so as to translate them into tangible, observable and assessable indications in the form of specific abilities. We shall, for instance, ask ourselves what are the indications to be expected of an individual who has developed, say, the ability for correct expression, comprehension, reasoning ability, or powers of observation etc. We must expect some valid improvements in our students from time to time as a result of their learning and unless we are in a position to list these observable and testable changes pertaining to a desired goal or ability, mere declaration of broad goals or aims of teaching will not lead us anywhere. As such, this procedure would amount to three stages namely:

(i) Careful survey and scrutiny of the above recommended sources of information;

(ii) Formulation of broad objectives to be achieved under different subjects of study; and

(iii) Analysis of each of the desired objectives in terms of specific abilities of students indicative of the achievement of the respective objectives.

The Psychological Types of Abilities: In this analysis of the objectives we are bound to arrive at the purely academic or achievement type of abilities as well as abilities of a psychological-cum-sociological nature. For instance, take a broad objective such as 'democratic citizenship' under social sciences. While analysing such an objective, the purely achievement and comprehensional types of specific abilities such as knowledge of specific laws and principles, interpretation of regulations, knowledge of one's duties, rights and responsibilities in a specific situation, understanding of the social needs and evils, ability to suggest reforms or methods of facing a certain problematic situation, discrimination among circumstances, ability to arrive at impartial judgment in a given situation etc., might be listed out and they are easily testable from the examination point of view, fairly objectively and reliably. But, side by side, under the same objective, we may also decide to enumerate abilities like co-operativeness, truthfulness, impartiality in views, punctuality, adjustability etc., which are psychological and sociological in nature. They cannot lend themselves to paper and pencil type of test situations as readily as the abilities of the first character. Hence, under the scheme of evaluation, the question of arriving at such psycho-sociological abilities also deserves attention.

Arriving at the Psychological Types of Abilities: Even here, the procedure of aiming at a desirable target as a model has been formed to give a firmer grasp of realities. Prof. H. A. Murray actually calls this kind of approach adopted by Professors Stern, Stein and Bloom in methods of personality assessment, as the sixth phase of development in the history of psychological assessment since the advent of

(i) intelligence tests by Binet and Spearman, through the other succeeding phases of,

(ii) assessment of the dispositional factors of achievement,

(iii) probing into the psychology of the unconscious and tests of individual differences,

(iv) paying attention to the social maladjustments of individuals and later, as a result of experiences of World War II,

(v) assessment of environmental conditions including factors arising out of physical as well as social origins and leading to extra vocational conditions and activities.

From the point of teachers, therefore, the formulation of these psycho-sociological factors of students' behaviours should be based upon realistic and clearly understandable models or targets. Attention should be paid to list out certain specific dimensions of behaviour with due consideration to the following criteria:

(i) Whether a trait is a direct indication of the achievement of the concerned objective of teaching a subject;

(ii) Whether it lends itself to clear and objective observation;

(iii) Whether those in-charge of assessing the students are clear as to its practical implications;

(iv) Whether it is possible to arrive at a reasonable conclusion by at least pooling the independent assessments of more than one observer; and finally

(v) Whether it fits in with the developmental stages of the students in view.

Abstract and remotely tangible phases of abilities such as one's outlook on life, culture, gentlemanliness etc., should be postponed, as far as possible.

Need for a New Approach in Methods of Teaching: Supposing a list of quite reasonable and essential broad as well as specific abilities has been finalised with all the possible precautions mentioned above. The next question is, how to adjust our teaching programme and methods of approach so as to enable our students to attain them. In so far as the educative process centres round imparting of information only, the methods of teaching amount to logical or psychological exposition of content matter and train students to reproduce the information. This is what is happening now in many instances. The curricula are drafted on the principle of the content analysis of subject areas with a view to cover the field of knowledge available, as far as possible. Care is, of course, taken to grade the material according to the different stages of instruction, in an ascending order.

The new approach to evaluation regards the above practice only as a partial and quite inadequate method of attacking the problem of education. The emphasis requires to be shifted to an analysis of the objectives of teaching a subject from an analysis of the content of education alone. In the presentation of a subject matter, therefore, teachers will have to be quite clear in their objective regarding the types of abilities to be developed among the students as a result of their teaching. Supposing the objective is to enable the students to have knowledge of the fundamentals of a subject. We have to ask ourselves as to what specific abilities or behavioural changes could be included under this particular objective and then make sure as to whether we are catering to their development proportionately well through the contents being taught. Lack of such analytic insight into our objectives results in a disproportionate and only partial attention to the different abilities and thereby we might perhaps remain content with catering to only one or two limited phases of abilities such as memorization of factual information, development of vocabulary, descriptive details of a particular topic and so on. This defect is not uncommon now.

Such an analytical approach is likely to lead us to certain important findings regarding the framing of the curricula also. We might, for example, arrive at the conclusion that a certain existing syllabus is inadequate to meet the requirements of the desirable objectives. For instance, we might find that an ability such as discrimination or judgment or interpretation of the given data in the light of past experience, is given very narrow representation through the contents prescribed. It would be our duty then to propose additions or alterations in the course contents so as to meet these important requirements and provide necessary experiences for the learners. But such proposals could be deemed justifiable only after we have convinced ourselves thoroughly regarding our findings. Hence the need for a careful approach in the presentation of the existing courses from the point of achieving the desired objectives and developing specific behavioural changes among our students.

The Approach to Psychological Types of Abilities: The approach towards the development of the psycho-sociological types of abilities is concerned more with creation of suitable situations rather than presentation of subject matter. Abilities such as co-operativeness, sociability, initiative, leadership, resourcefulness etc., which add to the personality development of the individuals, cannot be taught through contents alone. Schools will have to adopt the dynamic approach by suggesting activities, projects and social situations with enough latitude for students to use their initiative and develop the required skills or habits. Provision of necessary opportunities and learning experiences, therefore, is the common and most important factor in our approach to teaching methods whether we are aiming at the academic type of abilities or at the psychological and sociological types of behavioural changes.

Suggestions for Evaluating Academic Achievements: How to test the effectiveness of our approach, is the next step for consideration. Regarding the academic aspects of abilities, we have to evaluate as to whether our students have really achieved the objectives we aimed at. Obviously the relation between our testing procedures and the teaching approach should be the closest possible one. In testing these academic-cum-intellectual types of abilities, we could easily resort to the paper and pencil test approach by framing our questions to suit our objectives. This could be possible only when we have a clear understanding of the specific behavioural changes pertaining to different selected objectives in the concerned subjects.

The controversy between the new type objective tests requiring short or symbol type answers from students and the traditional essay type of questions is lively to-day. The former type of questions are regarded by some as a reform and improvement of our examinations from the point of eliminating the subjective elements in assessing the performance. While this is a fact, we will be missing the point altogether if we do not scrutinise the questions as to whether they are demanding of students any really desirable abilities in accordance with our analysis of objectives. In fact, it is the nature of the objective or the specific ability to be tested that should decide as to whether a particular question should be framed as an essay type, short answer type or as an objective type. Once our analysis of the specific abilities to be tested becomes clear cut, the so-called essay type of questions themselves get clarified and limited in the extent of the required answers. Instead of asking pupils to write, for example, an indefinite essay on a particular topic or describe an event without specifications of limitations, the examiners would then realise the need to specify the exact nature of information or ability to be demanded so that the performance of students might give a definite indication as to whether they have grasped a particular point or not. Questions of an ambiguous nature and such questions as give room for mere guessing will, therefore, have no place in examinations or class-room tests. In order to ensure such an evaluation procedure steps such as follows are recommended:

1. Teachers or examiners need not be very ambitious to cater for too many objectives in the beginning itself. Two or three quite tangible and most commonly recognised objectives would be helpful to start with. The Evaluation Unit of the All India Council for Secondary Education, now the Directorate of Extension Programmes for Secondary Education has, for instance, started their programme of examination reform with only two objectives namely, knowledge and application. Gradually, when we gain more experience and better mastery over the technique, other important objectives could be added to the list.

2. A definite understanding has got to be created among students and teachers in general regarding the introduction of these aspects of abilities in the examination papers so as to direct their methods of learning. A preparation period of at least two years may have to be allowed as margin before introducing such questions in the public examinations.

3. Teachers might require special training in this new mode of thinking. Such opportunities will have to be provided frequently so that they might get insight into the objectives and their analysis in terms of behavioural changes, methods to be adopted for enabling the students master the required abilities and into the methods of framing suitable tests.

4. Public examination papers, so long as they continue, should be set not by a single examiner, but by a panel of examiners with sufficient experience and training in the new approach. They must be given at least a period of two months for framing the test questions and for meeting among themselves as frequently as necessary for mutual consultation and finalisation of tests. The moderation boards that usually function after the papers are set by a single examiner according to the present practice, will thus get merged into the working of these panels of examiners themselves.

5. Expert boards of subject specialists have to be created and attached to the Secondary Boards of Education as full time workers for purposes of intensive preparation of tests and follow up study of student responses. Such boards would also serve as guides to paper setting panels of examiners. Moreover, they could be of help to the Departments of Education in training teachers through seminars and workshops in the techniques of evaluation.

The main outcome to be expected of these procedures would be a changed attitude on the part of students towards their studies and preparation for life. Instead of remaining content with scraps of information, they would be expected to develop into learners from the point of application and thinking.

Evaluation of Psychological Traits: The evaluation of traits pertaining to the psycho-sociological aspects of development will have to be carried on mostly on the basis of careful observation of students' behaviour throughout the school career. Subjective elements seem to crop up here. Besides, if these traits are left undefined and adopted for evaluation purposes simply because of their attractive nomenclature, the assessment becomes further complicated. For instance, traits like personality, character, citizenship, emotional stability etc., lend themselves to different interpretations from different persons when considered from different points of view and are thus likely to result in unreliable and invalid evaluation. In this regard, even most of the standardised tests of such traits are only partially helpful because of certain unconcerned but perhaps inevitable factors such as range of vocabulary, familiarity with language, emotional set of the subjects at the time of taking the tests etc., entering into their administration. Moreover, teachers in our secondary schools may have to wait for a pretty long period to come before such locally standardised tests in the regional languages could be made available to them, for what they would be worth. Therefore, without waiting for such aids, the following suggestions might be considered in the meanwhile, so as to enable the teachers to maintain cumulative records as objectively as possible.

1. Schools will select these behavioural aspects of development only to the extent to which they feel they could clearly observe and watch the progress among students. Just as in the case of the academic types of abilities, these abilities too should be specific enough. Vague terms which teachers feel at a loss what to do about, should be postponed.

2. After the traits are carefully selected, it would be advisable to define them in observable details from the positive to the negative range of dimensions for purposes of assessment. Perhaps, it would be convenient to adopt a five point scale such as 'excellent', 'above average', 'average', 'below average', and 'poor'.

3. Again, each of these steps would be clarified in terms of student behaviour so as to enable every teacher to make sure what an 'excellent' or 'average' trait means. With experience, such definitions are sure to get further crystallised.

4. Frequent comparisons of assessments among teachers of the same class or grade must be resorted to. Such comparisons would bring to light differences of views. The benefit of these differences will, of course, go in favour of students.

5. Even the students must be made conscious of this process of evaluation. It would be of stimulating interest to them if they are given opportunities of self-evaluation among themselves.

The important outcome to be expected of these procedures would be an increasing awareness on the part of students regarding the significance of their day-to-day activities in and out of school.

Conclusion: In conclusion, let us remember the following conditions necessary for making the evaluation programme helpful to the instructional programme as an integrated approach to both the categories of abilities discussed so far.

1. There should be no disharmony between instruction and measurement or evaluation programmes. The objectives of the instructional programme should be strictly kept in view in any scheme of assessment.

2. Similarly, the testing of abilities should become an integrated part of the curricula also. They should not be treated as separate departments.

3. The testing and evaluation programme should be guided and controlled by those responsible for the control and guidance of the instructional programme. In so far as the achievements of pupils are concerned, the interference of external examining bodies requires to be minimised.

4. Greater insistence on teacher-made tests rather than those prepared or standardised from other quarters, would be necessary at all levels.

5. Separate subject wise committees or boards of teachers will have to be formed for purposes of developing tests in accordance with their combined outlook. They may seek guidance from specialists working on the evaluation units attached to the Boards of Secondary Education.

6. Each school may have to develop a division of tests and measurements as a control and guidance unit for all its subject-wise committees. This division would also help in making the different test results available to all teachers to plan their instruction even in the field of the psycho-sociological types of abilities.

Let us hope that our students would one day develop a genuine and healthy attitude towards building up their careers with a sense of responsibility to be able to contribute their best.

BIBLIOGRAPHY

Adams, G. S., Torgerson, T. L., and Wood, Earnest R.: *Measurement and Evaluation for the Secondary School Teacher,* The Dryden Press, New York, N.Y.

All India Council for Secondary Education, New Delhi: *Evaluation in Secondary Schools.*

A Taxonomy of Educational Objectives, edited by B. S. Bloom, Longmans, Green & Co.

Evaluation in General Education, edited by Paul Dressel, Dubugue, Iowa, Wm. Brown & Co.

Green, Harry A., Jorgensen, A. N., and Gerbenic, J. R.: *Measurement and Evaluation in Secondary Schools,* Longmans, Green & Co.

Furst, Edward J.: *Constructing Evaluation Instruments,* Longmans, Green & Co.

Hawkes, H. E., Lindquist, E. F., and Mann, C. R.: *Construction and Use of Achievement Tests,* Houghton Mifflin & Co.

Educational Measurement, edited by E. F. Lindquist, American Council on Education, Washington.

N.S.S.E., 45th Year Book: *Measurement of Understanding,* 1946.

Remmers, H. H., and Gage, N. L.: *Educational Measurement and Evaluation,* Harper & Brothers.

Smith, Eugene and Tyler, R. W.: *Appraising and Recording Student Progress,* Harper & Brothers.

Stern, G. G., Stein, M. I. and Bloom, B. S.: *Methods in Personality Assessment.* The Free Press, Glencoe, Illinois.

Tiegs: *Tests & Measurements in the Improvement of Learning.* Houghton Mifflin Co.

Travers, Robert M. W.: *Educational Measurement.* Macmillan.

TESTING IN ADVANCEMENT OF EDUCATION

by Anna Dragositz

MISS ANNA DRAGOSITZ, *the author of* Testing in Advancement of Education *is the Director of Evaluation and Advisory Service of the famous Educational Testing Service, Princeton. Miss Dragositz has taught for a number of years in the Teachers' College, Columbia University as well as in the Brooklyn College, New York. She joined the Educational Testing Service in 1947 where she worked her way to the present position. Miss Dragositz is the author of a number of research monographs and papers on different aspects of testing and education. It may be recalled that our author was a member of the American team of experts on Examination Reform that visited India during the months of July and August, 1959.*

The author shows in this contribution how testing as a tool of education helps in understanding the capacities, growth and development of the student and how it is a means for planning instruction and for evaluating the strengths and weaknesses, the successes and failures of teaching. And such understanding, planning and evaluation lead to the advancement of education.

The author gives valuable suggestions for the construction of achievement tests in the matter of defining educational objectives and stating them in concrete behavioural terms and preparing well-written questions. She points out the two extremes, but the most common misinterpretations of test results viz. (i) placing too much emphasis or reliance on them and (ii) declaring them utterly useless. Their values should be somewhere in the middle. Tests provide samples of the student's abilities or behaviour which when combined with other information about him will increase understanding of his capacities and achievement.

The author details the various uses to which tests could be put in modern education and for the advancement of education. Evaluation of students achievement at the end of their studies, evaluation of skills and abilities of students when they begin the study of a subject, understanding the abilities and deficiencies of students with a view to modifying and adapting instruction, assessing student achievement for evaluating effectiveness of teaching done by the teacher, evaluating the effectiveness of different methods of instruction, for admission, for educational and vocational guidance—these are some of the important uses of tests enumerated by her. The author reiterates the recommendation of both the Indian Examination Reform Team that visited U.S.A. and the American Team that visited India that positions *of college evaluation officers should be established to facilitate the development of testing in India.*

THINKING nations recognize the importance of the development of their human resources for the progress, happiness, and freedom of their people. And they recognize that this development can best be achieved through appropriate and sound educational principles and practices. Hence we find world-wide concern for the improvement of education.

It is therefore no small wonder that there is an increasing interest in testing. Testing is a tool of education. It is a means for understanding the capacities, growth, and development of the student. It is also a means for planning instruction and for evaluating the strengths and weaknesses, the successes and failures, of teaching. And such understanding, planning, and evaluation lead to the advancement of education.

Perhaps the most traditional use of tests has been for the purpose of determining how much students have learned, at the end of a period of instruction. If properly prepared, administered and interpreted, such tests have a legitimate and important role in education. However, too often they are poorly prepared and far too much significance is attached to their results.

Any achievement test—whether it is used to measure achievement over a short or long period of time—must reflect the objectives of teaching. Thus the first step in the preparation of an adequate achievement test is to define educational objectives. These definitions must go beyond broad generalities; they must be stated in concrete behavioural terms.

This first step in the preparation of an adequate test is often omitted because it is perhaps the most arduous of all. It requires the examination of instruction in term of its contribution to the broader educational goals of the nation, the state, and the school as well as the more specific objectives to be achieved in a particular course of study or classroom.

Once the teaching objectives have been defined, the types of questions to be used in the test become more obvious and less controversial. The values and limitations of the essay, the objective, and the practical test will be more obvious. What the test should measure—factual information; subject matter knowledge; writing and reading skills; ability to interpret, synthesize and infer; motor skills; etc.—will also be determined by the defined objectives.

While the definition of objectives can be a guide to many important decisions, it unfortunately does not insure well-written questions! This is a skill which must be acquired but one which is not beyond the abilities of the teacher. Consultation with persons trained in test construction techniques and the many texts which give principles and procedures, as well as examples, can be helpful guides to writing sound questions.

The interpretation of results is still another matter and one which is as important as the definition of objectives. The two most common misinterpretations of test results are at extremes:

(i) placing too much emphasis or reliance on them, and

(ii) declaring them utterly useless.

Their values lie somewhere in the middle.

A single test, or even a series of tests, cannot describe an individual's abilities and achievements completely, or for all time to come. Tests provide samples of the student's abilities or behavior which, when combined with other information about him, will increase understanding of his capacities and achievement. In the United States, for example, teacher assessments have consistently been the best predictors of school and college success. However, when test results are added to school grades, the accuracy of prediction is increased.

It should be pointed out that in the United States there has been a long history of teacher assessment. This does not mean that all teachers are masters of the arts of testing and grading but they are not faced with all of the many problems which confront Indian teachers at present. However, the progress which Indian educators have made in internal assessment promises increased reliability and validity of such grading.

The traditional use of tests to evaluate the student's achievement at the end of a period of study is by no means the only profitable purpose of testing. Measuring the learning of smaller units of material can provide a guide to progress over shorter periods of time. Units or steps that are not mastered can then be given immediate attention. Thus the student and teacher can be continuously aware of the nature, extent, and pace of learning. With such information, the teacher can plan instruction in terms of group and individual needs, and the student will not need to wait until the end of a long period of instruction to know whether he has met requirements.

A more recent development in the use of tests has been for the purpose of evaluating the abilities and skills of students when they *begin* their studies of a subject. Such testing is an aid to the teacher in planning his instruction. It may reveal that the students he is to teach have a good grasp of the background material they need in order to learn what he is to teach and indeed they may already know some of the material he had planned to teach. Or the reverse may be true: they may not have the essentials they need to take the next step on the educational ladder and the teacher may need to teach some things he had not planned to cover.

Understanding the abilities and deficiencies of students contributes to the advancement of education by providing information which is helpful in modifying and adapting instruction. So it will be maximally effective. It is futile to teach physics to the severely mentally retarded; it is wasteful to restrict the gifted youngster to simple arithmetic when he can grasp higher mathematical concepts. As instruction is geared to the capacities of the student, education becomes meaningful and efficient. Teachers are stimulated to think about methods of teaching rather than to be content with parroting and regurgitating texts and other printed literature. Thus they will seek new and more effective ways of practicing their art.

Too often the focus of testing is on the learning of the students, with little or no attention to what testing may reveal regarding the effects of instruction. Testing can tell the teacher as much about his teaching as it can about his students' learning. Tests can help the teacher in evaluating the effectiveness of his teaching.

If a teacher has set up and directed his instruction toward his objectives and the tests show his students have not learned what he has taught, he may then raise the question of "Why?" The answer may lie in his students' abilities or motivation but it may also be found in his teaching. If upon examining what he knows about his students' abilities and his observations of their application to their studies he cannot legitimately find the answer there, he must then scrutinize his teaching. It may well be that he has not given the unlearned material the proper or sufficient emphasis, or his teaching methods may have been such that they did not convey the concepts, abilities, or facts he wanted his students to learn.

Tests are also useful in evaluating different methods of instruction. Do students learn some things as well in a large group as in a small group? Do audio-visual materials facilitate learning? Do frequent tests stimulate learning? Does the student who knows his progress from periodic tests do better in the end than the one who has only one examination at the end of his course of study?

These are but a few questions that can be answered about teaching methods. With the answers to such questions, it is possible to adapt instruction and to use those methods which assure maximum learning. Teaching is a science which needs constant experimentation if it is to progress. And testing provides the tool whereby the effectiveness of one method over another may be studied.

Another long-standing educational use of tests has been for the purpose of admitting students to a school or college. Selecting the appropriate students has always been a problem, but today it is an even greater one because of the increasing numbers of students who are seeking admission to educational institutions of all types and at all academic levels. Tests can be helpful in selecting those students who are most likely to benefit from the type of educational program being offered by a particular institution.

How tests are used for selecting students can help or hinder the advancement of education, and particularly in the sense of making it available to the greatest number who can profit from it. If tests are not used wisely, they can permit the wrong students to gain admission and thereby not only waste teaching efforts and facilities but exclude more appropriate students from the opportunity to study. No nation can afford the luxury of such errors. They must be kept to a minimum if increased numbers are to reap the benefits of education.

There are many other important uses to which tests can and are being put today. They can be used to guide the student into courses of study which are compatible to his abilities, interests, and personal characteristics. They can also be used to place students in sections of courses which are geared to different levels of student preparation and ability. Administrators can use them to study the trends in student abilities and achievement, as a guide to the need for expanding or revising curricula, and as an estimate of how well their institutions are achieving their educational objectives.

How tests should be used and what tests should be employed must be determined by the educational situation. Like education, testing cannot be exported or imported. What is appropriate for one country, state, school, or university may be a hindrance to advancement in another.

Testing should be an integral part of the total curriculum and not something superimposed. Its origins should be in the educational objectives to be achieved. These will determine the purpose and nature of the tests.

There are further factors, also inherent in the educational system, which should play a role in determining the type and extent of testing. The readiness of teachers to accept and participate in testing activities is one consideration. Another one is the mental set and expectations of the students. If either teachers or students lack understanding or readiness for the type of testing to be done, every effort should be made to prepare them for it since no testing will be maximally effective if its nature and purposes are not clear to these two groups.

Two very essential ingredients for a successful testing program are measurement knowledge and staff time. The Indian Examination Reform Team that visited the United States in 1959 recommended that positions of college evaluation officer be established to facilitate the development of testing in India. A similar recommendation was made by the American team which returned their visit the following summer. It is fair to say that both recommendations imply the fact that advancement in measurement will bring advancements in education.

PSYCHOLOGY AND THE CURRICULUM

by Dr. Theodore D. Rice and Dr. Chandos Reid Rice

MANY *Indian educators, particularly those working in the fields of secondary and teacher education will recall the important and intelligent contribution that both Dr. Theodore D. Rice and Dr. Chandos Reid Rice made to stirring up thinking on problems of education and helping teachers, headmasters and inspectors find out solutions to the problems on secondary education through the workshops on secondary education that they conducted in Patna, Jabalpur, Baroda and Mysore during 1953-1954. Dr. Theodore Rice was Professor of Education for a number of years at New York University and is at present Professor in the same subject at Wayne State University, Detroit, Michigan. Dr. Chandos Rice was formerly a member of the staff of the Teachers College, Columbia University and is at present Assistant to the Superintendent of Schools in Waterford Township, Michigan.*

Dr. Theodore Rice and his learned wife are noted for their ability in throwing fresh light on difficult problems in education. This indeed is what they have done here in their contribution on Psychology and the Curriculum. *Discarding the dichotomy between methods and contents as an inadequate approach to the current urgencies in teaching and learning, the authors emphasise that the entire teaching-learning process must be assessed if it is to be improved, namely the content, method, the self-picture of students and the expectation level in which teacher and student are working together. The content must be examined and developed in terms of the current demands of research in the field, of the application in the life of the community, and of the relation it bears to the past experience and present motivation of the learner. After discussing the issues, the authors rightly conclude with the statement that universal education with all that it means in terms of differences in the abilities, motivation and expectation of learners must be linked with the explosion currently taking place in the various fields of knowledge. Research scholars in the subject areas and in the psychology of learning must also work with the teacher who has the responsibility in translating their findings into a practical curriculum. For it is only as the teacher becomes a student of psychology in his classroom and becomes increasingly accurate in assessing the needs and progress of students that real curriculum improvement can be made.*

THERE is evidence that the dichotomy between methods and content is an inadequate approach to the current urgencies in teaching and learning. It is increasingly apparent that the nature of content influences markedly the method to be used. Similarly, such psychological factors as motivation, the influence of environment on development, and the role of perception are obvious concomitants in successful curriculum development. If curriculum is to be defined as "that body of experiences under the control of the school through which the learner develops his understanding and concepts, skills and behaviors in relation to the world about him", then the experiences designed and provided for students must be tested against their psychological effects upon the learner himself. The entire teaching-learning process must be assessed if it is to be improved; namely, content, method, the self picture of the students, and the expectation level in which teacher and student are working together.

Such an approach to curriculum means that an outline of history, or a delineation of number combinations, or a series of rules of syntax in grammar or laws in physics is not sufficient substance for curriculum. This content must be examined and developed in terms of the current demands of research in the field, of the application in the life of the community, and of the relation it bears to the past experience and present motivation of the learner.

Let us begin with an examination of the way in which social expectation affects the curriculum. In a society in which attendance at school determines the type of employment which is open to graduates of the school, the enrolment of students in the school already suggests strong motivation toward the vocations thus made possible. In such a situation, external pressures of the teaching staff in the form of grades or examinations become strong motivating factors for learning. The curriculum content of the school is not necessarily significant, either for the school officials or for the students, since, whatever the content may be, those who are successful in meeting the standards set up are thus made eligible for the vocation which requires graduation as its prerequisite. This was the situation in colonial India, where the actual content of the curriculum was derived in large measure from the English culture and the British social expectation, and the purpose of this schooling was to make the successful student eligible for a government position. The appropriateness of the curriculum to the indigenous culture was not important, since it was designed to enable its recipients to function in relation to the foreign culture.

With the coming of independence and the ideal of universal education established, however, the expectations for education are vastly different and the curriculum itself must be changed in terms of those expectations. The shift in expectation is both sociological and psychological. As a larger and larger segment of the population attend school, two things happen. First of all, jobs in government service cannot possibly be found for all graduates and there is resultant dissatisfaction because of lack of employment. Such dissatisfaction is then gradually followed by a wider distribution of occupations for graduates or those who have attended school. As this happens, the intensity of motivation to attend school in order to enter a particular profession or in order to reach a higher social status is lost, and the curriculum is expected to relate to the occupations which people enter and to enable them to become more proficient in those occupations. At the same time, as a larger segment of the population attends school, those in school are less highly motivated to do whatever the school demands, and more insistant that the school experience should have meaning to them as individuals. At the same time there is increased demand for relating the curriculum of the school to the culture—for giving it *meaning* both culturally and in terms of the previous and present experience of the individual himself. Rote learning, examinations designed to select those who remember most efficiently or even those who can translate themselves into another culture most easily ceases to be the major purpose of education, and the relation of curriculum to the indigenous culture becomes imperative. Careful selection of curriculum content must be made in terms of its significance to the culture, and concurrently its significance to the learner as well. The range of individual differences increases steadily as a wider segment of the population attends school. No matter how carefully content is selected, it will not have the same meaning or significance for all students. The need for developing efficient learning procedures and for selecting a range of experiences which will help each individual develop to his maximum capacity increases. Thus the change in purpose which comes with an emphasis on universal education necessitates a closer relationship between psychology and the curriculum. As schools plan curriculum to meet the needs of the total population, a broader range of content is selected as significant, more choice is made possible for different individuals, and ways of carrying on learning experiences in order to develop each individual student to his maximum potential are incorporated in the curriculum.

"How any person behaves at any moment, modern psychologists tell us, is dependent upon two things: how he sees himself and how he sees the world in which he lives. Education has done pretty well with the latter half of this equation. Recently psychologists have been discovering fascinating things about the other half of the problem, the self concept which opens exciting new horizons for education."[1]

These studies indicate that the attitude a student has towards himself is of equal importance in determining what he learns or how efficient his learning may be, to his concept of the world about him. Studies of students in reading clinics would seem to show that most difficulty has nothing to do with *seeing* but results from the fact that these students *believe* that they cannot learn to read. If a student believes himself to be a failure, he will act like a failure. If he believes himself to be capable, he will act like a capable person and will do the things a capable person is expected to do.[2]

If these studies are valid, and there is increasing evidence that they are, then it becomes tremendously important for curricular experiences to be developed in such a way that a child sees himself as successful in doing them. If we wish him to behave in certain ways—whether to become literate, or competent in mathematics or science, then we must give him experiences which help him develop a feeling of confidence in relation to these areas of learning. The need for success experiences if learning is to proceed with maximum efficiency is agreed upon by psychologists of many different schools of thought. According to one school of thought, such skills as those of spelling or arithmetic computation or thinking skills such as the ability to generalize or to determine the key idea of a paragraph can be presented to students in a sequence in which the student is always successful, but successful in material which is increasingly difficult. Thus, by careful selection of the sequence of materials presented to them, students *can*

---

[1] Combs, Arthur W., "New Horizons in Field Research: The Self Concept", *Educational Leadership*, February, 1958. pp. 135 ff.

[2] Walsh, Anna Marie, *"Self Concepts of Bright Boys with Learning Difficulties"*, Teachers College, Columbia University, 1956.

be kept from making errors and thus reinforce their learning by correct responses only. It is this type of material which Skinner is attempting to develop in his experiments with teaching machines at Harvard University.[3]

The relationship of these psychological experiments to curriculum is obvious, for if certain areas of learning such as spelling or reading comprehension could be analyzed in order to provide this type of experience, the analysis would determine a significant portion of curriculum in those areas.

Whether such minute analyses of various areas of study can be adequately carried out or not, the importance of success experiences in order to extend the interest of the learner and to give him a concept of himself as a competent person should determine the particular selection of materials and learning experiences in any given classroom. It may be of value to emphasize the fact that students must feel a real challenge in order to learn efficiently and effectively, but to point out at the same time that there is a very narrow line of demarcation between threat and challenge. A task which is perceived by the student as difficult, but not too difficult for him to accomplish is a challenge. A task which he perceives as too difficult for him to accomplish, even if he tries as hard as he can, is a threat and interferes with learning rather than aiding it. It is the task of the curriculum maker not only to plan experiences in learning which are challenging to students, but also to provide for variety in the time and spacing of such experiences so that they do not become threatening. And it is the very great importance of the selection of appropriate experiences that points toward the advisability to teacher participation in curriculum making.

It may be well to point out that the foregoing discussion has nothing to do with planning "easy" courses. The planning of curriculum should not be done in terms of easiness or difficulty, but in terms of promoting a maximum amount of learning. This can be done only through giving opportunity to accomplish tasks which the student perceives as worth doing and possible of accomplishment by him. If they are too "easy" they are not worthy of his time. If he feels that he cannot accomplish them, they destroy both his sequence of learning a particular thing and his belief in his ability to learn.

---

[3] Skinner, B. F., "Teaching Machines" *Science*, October 24, 1958, Vol. 128, No. 3330, pp. 969-977.

Within the curriculum plan and its execution in the individual class there must also be provision for a wide range of individual differences. Reading should provide for students of varied reading ability. A student may be able to learn the same content from a book or magazine which is simply written or from a book or magazine which uses a more extensive vocabulary. Both types of material should be provided for students, and the teacher should help the individual student find the type of reading material which he can use most profitably. We saw a library committee in one school in India which clipped and filed articles from magazines and thus increased the kind of reading material available on many subjects.

Learning can be reinforced through a variety of experiences which deal with the same ideas or the same generalizations. Dramatization may be used to reinforce the learning gained by reading and the experience of developing the idea in a different form may deepen its meaning. Similarly, telling the story of a historical event in posters may require sharpening of the ideas for the student who makes the poster, while it makes the idea available in simple form for the student who may not have read the same material. In planning curricular experiences, there must be attention both to the fact that different students learn in different ways and with differing degrees of readiness and to the fact that a single individual also learns in many different ways. Probably the most effective learning is the learning from direct experience, but this may be far from practical for much of what is to be learned. Films and other pictures are of great value in deepening understanding of any topic as are models, trips, and interviews. When curriculum has as its purpose the development of every individual to his maximum potential its success must be judged primarily in terms of what it does for the individual student. In one school setting in which there is a high level of expectancy for intellectual proficiency among parents and teachers and a high achievement level among the children generally, an investigator checked the behaviors of the high achievers and low achievers. Among his findings he characterized the general high achievers in Grade III as being sensitive and responsive to socialization pressures, accepting adult values, and striving to live up to adult values. His check on their perception of parents indicated that they saw parents as being overprotective, pressuring for achievement, and lacking emotional warmth. High achievers were well controlled emotionally and reflected a "high degree of inner harmony." In comparison with the less high achievers they were more tense, competitive, and aggressive. Their work habits were good and they were persistent. They got along better with adults and peers and were generally better adjusted. Among the group who remained high achievers academically in the seventh grade, there was continued effort to conform to the adult pressures and standards. Coupled with this continued behavior, however, they appeared antagonistic toward adults and tended to reject the adults as persons. Their level of anxiety was increased, while their intellectual originality and creativity decreased.[4]

Since originality and creativity are high among desirable goals, it was apparent that the total learning situation was not producing the type of behavior which was sought. This study again points to the importance of considering the psychological procedures and effects as a part of the total learning situation, for by the methods used, the goals sought in designing the pattern of experiences may be lost or nullified.

Different fields of learning may have goals which are different enough to require widely varied patterns of learning experiences. Recent developments in the teaching of language other than the mother tongue, for example, demand a type of experience and procedure which would not be used in teaching other subjects. In the United States at the present time there is a concerted effort to modify language teaching to approximate the conditions of learning it within the culture to which it is indigenous. (Several curriculum developments including the three mentioned in the following paragraphs are described in the December 1959, issue of *Educational Leadership,* the official journal of the Association for Supervision and Curriculum Development of the National Education Association of the United States.) For example, if a student is studying French, the pictures, the words, the stories which he learns are actually French pictures and words and stories. A film or a series of still pictures of France is presented to him together with the words which describe what he sees. THERE IS NO TRANSLATION. Only the French language is spoken and several hours of practice per day are provided through the use of electronic tape or records. Thus the student learns to speak and to think in the language and to seek materials about the country for his reading in that language. The pictures, books, tapes, and conversations with fellow students or with the instructor are planned as a saturation of the environment so that he may learn the new language through actual experience with it, as he learned his mother tongue rather than by translating from his mother tongue. The procedure was developed through a study and analysis of the way in which children learn their own language and an attempt to duplicate those conditions in the study of a new language. Thus the very nature of the content determined the psychological procedure which is deemed appropriate.

---

[4] Haggard, Ernest A., "Socialization, Personality, and Academic Achievement of Gifted Children" *The School Review,* Vol. LXV, No. 4, Winter, 1957.

Modern mathematics is undergoing a similar change. The tremendous increase in the demand for professional mathematicians as well as increased use of computer systems in business in the United States at the present time has made mathematicians aware of the need to develop basic mathematical understandings as a prerequisite to learning the usual patterns of computation. It is more important for the average person today to understand how a number system develops and how to work in various number systems than it is for him to be perfect in the skills of the decimal system. This means that the program in mathematics is being rewritten by mathematicians, psychologists, classroom teachers, and supervisors working together, for an intensive study must be made of the ways in which abstract understandings develop if appropriate experiences are to be provided for developing them.

In science, also, changes in knowledge are taking place so rapidly that it is difficult even for scientists to keep abreast of new developments. This field has constantly to be reappraised in terms of the basic ideas needed to participate in modern scientific effort. Many of the laws and formulae which have been considered standard in a physics course, for example, must be replaced by more recent research findings. Daily experiences of young people must also be reappraised in order to determine how they contribute to a scientific understanding. Some concepts which seem difficult to adults are quite simple for children who have been brought up in an age of jet air travel and space exploration. Only by continuous study of the reaction of students to experiences provided for them can adults actually determine whether concepts and procedures are simple or difficult for the child of today. Here again, we need to turn to a study of the learning process and the effect of the environment on students in order to determine the curricular experiences appropriate for them.

The very complexity of the task of modern education demands a team approach. Universal education with all that it means in terms of differences in the abilities, motivation, and expectation of learners must be linked with the explosion currently taking place in the various fields of knowledge. Research scholars in the subject areas and in the psychology of learning must also work with the teacher who has the responsibility to translating their findings into a practical curriculum. For it is only as the teacher becomes a student of psychology in his classroom and becomes increasingly accurate in assessing the needs and progress of students that real curriculum improvement can be made.

EDUCATIONAL PSYCHOLOGY IN TEACHER EDUCATION

by Arthur P. Coladarci

DR. ARTHUR P. COLADARCI, *the author of* Educational Psychology in Teacher Education *is the Professor of Education and Psychology in Stanford University. Dr. Coladarci's experience in the field of education has been wide and varied. He has served as teacher, psychologist, professor of psychology, consultant on areas like curriculum and education of the gifted child, and as consulting editor with well-known publishers like Dryden Press and John Wiley and Sons. During 1955-56, he was the Chairman of the Committee on Relations between Psychology and Education of the American Psychological Association. He worked in the University of Tokyo during 1957-58 on a Fulbright award and was also research Consultant to the Ministry of Education, Government of Japan. Dr. Coladarci has to his credit three books, several monographs and many journal articles in the areas of educational psychology, statistics and educational criticism.*

Dr. Coladarci points out here that educational psychology being a crucial ingredient in the preparation of teachers has received among the areas in teacher education the largest degree of sustained and critical attention. The substance of the criticisms stress that educational psychology courses have been dysfunctional in their content, dogmatic in the methods employed and too largely devoted to the assimilation of factual content from psychology at the expense of professional learnings. The need for redefinition of the intent and content of educational psychology has brought in an emphasis in the direction of closer co-ordination between the subject matter of educational psychology and the experiences of the prospective teachers in school situations. There is another incipient and more heuristic development which is more recent. As a consequence of defining the teaching role as constituting partially an act of enquiry, the educational psychology course is viewed as the appropriate place in which to help the future professional person learn how to go from observed datum to hypothesis about educational procedures intelligently and with calculated tentativeness. The author holds the right conviction that should the latter tendency continue, its impact on teacher education will be highly consequential, not only with reference to educational psychology but with regard to the host of methods courses as well.

IT is probably fair to observe that, of all the areas in teacher education, educational psychology has been the object of the largest degree of sustained and critical attention. Experimental and logical analyses of the course offerings in teacher education largely are limited to those in educational psychology and closely allied areas and only rarely are directed toward the other course offerings in teacher education. While this disproportionate evaluative interest may be attributed to many factors, one of these factors undoubtedly resides in the general acknowledgment that educational psychology is a crucial ingredient in the preparation of teachers. It is not necessary to detail the substance of the many critical discussions which have appeared in the professional literature since the beginning of the present century; these have been summarized, for the United States, elsewhere.[1] Where these criticisms have been negative they have been in substantial agreement: educational psychology courses have been dysfunctional in their content, dogmatic in the methods employed, and too largely devoted to the presentation and assimilation of factual content from psychology at the expense of functional professional learning. The positive plea has been put aptly by Bruce: "psychology will function in the education of teachers only when the practical and theoretical aspects, the specific experiences and general principles become inter-related in the thoughtful action of students."[2] Similarly, Kinney recently has argued that whereas educational psychology tends to be comprised of dogma and untestable generalizations, the major role of such courses should be the production of hypotheses about learning in school situations.[3] The relevancy of such criticisms and statements of desirability is difficult to deny. Many observers have noted the preoccupation, in educational psychology courses, with the factual content, *per se*, and yet any clear statement regarding the kinds of competences needed by teachers suggest clearly that the course objectives should be directed toward interpretation and extrapolation of data and principles.[4] Furthermore there have been a plethora of studies, McDougall's[5] most recently, demonstrating that abilities to interpret and extrapolate relevant information are retained longer and better than the ability to recall the content of educational psychology.

---

[1] Blair, Glenn M., *Educational Psychology, its Development and Present Status*, University of Illinois, Bureau of Research and Service, College of Education, 1948, Coladarci, Arthur P., *Pre-professional Experiences in Educational Psychology: A Review of Opinion and a Critical Note*, Bulletin of the School of Education, Indiana University, 1951.

[2] Bruce, William F., "Psychology Functioning in the Education of Teachers", *Journal of Educational Psychology*, 43 (1952), 92-100.

[3] Kinney, Lucien B., "New Horizons in Research", *Journal of Teacher Education*, V (1954), 292-297.

Generally, then, there has been an increased sensitivity in the United States to the need for some redefinition of the intent and content of educational psychology in teachers' colleges. The National Society of College Teachers of Education gave special consideration to this general problem in 1947 by appointing a series of special committees, one of which was to study and recommend changes in the content, sequence, organization, and teaching procedures in educational psychology courses. This special committee reported in a series of papers in 1948,[6] 1949,[7] and finally in 1950.[8] The several papers comprising the reports of this committee deserve the attention of professional educators since they have been fairly instrumental in provoking increased interest and further inquiry in teacher education, with particular respect to the psychological foundations.

As the foregoing concerns and pressures have become more visible, we have seen an identifiable shift in the content and methods employed in educational psychology for prospective teachers. This change in emphasis is in the direction of closer coordination between the subject matter of educational psychology and the experiences provided in the laboratory schools associated with teacher education institutions. Briefly, the organizing rationale appears to be that of orienting the content of the educational psychology courses around the problems faced and observations made by the students in their laboratory school experiences. Apparently, where the instructor in educational psychology and the director of the laboratory experiences have coordinated their efforts carefully, such an orientation has worked reasonably well. It is safe to predict that this explicit relationship between the abstractions of psychology and the specificities of the professional situation increasingly will represent the direction in which change takes place.

---

[4] Klausmeier, Herbert and Swanson, Donovan, "The Development of a Functional Course in Educational Psychology for Teachers", *Journal of Educational Psychology*, 41 (1950), 449-472.

[5] McDougall, William P., "Differential Retention of Course Outcomes in Educational Psychology", *Journal of Educational Psychology*, 49 (1958), 53-60.

[6] "The Psychological Basis of the Modern Curriculum", *Journal of Educational Psychology*, 39 (1958), 129-169.

[7] "Educational Psychology in the Education of Teachers", *Journal of Educational Psychology*, 40 (1949), 257-294.

[8] "Educational Psychology for Teachers", *Journal of Educational Psychology*, 41 (1950), 321-373.

All of the foregoing is rather generally understood and largely constitutes the general professional orientation of people in education. There is, however, another incipient and more heuristic development which is just getting underway and which will undoubtedly engage interest and effort on a wider scale in the near future. The remainder of this paper will deal with this particular point.

It can be argued, as indeed it has been argued, that a major source of difficulty in organizing a curriculum for teacher education is that little attention has been given by the profession to generating an adequate and basic conception of what it means "to teach." Presently held conceptions, by and large, are only vaguely held and tend to be filled with vague sentimentalities instead of clear and rigorous concepts. Without an adequate orienting conception of the nature of the basic professional role which the prospective teacher is to fill, the curriculum of teacher education will continue to be based on many *ad hoc* grounds. Recently, we have offered a logical model of "the teaching act" that has attracted sufficient attention to suggest that it or similar models will engage increased interest in the future. It is briefly described here not for the purpose of suggesting that it should serve as the normative model but, rather, to indicate the implications of such a model for the role of educational psychology in professional education.

The model is based on two assumptions: (a) that education, as a social institution, comprises deliberate intent to bring about change in learners; (b) that the validity of any educational procedure or technique is only *probabalistic;* it is not certain. It can be assumed, we believe, that professional educators would be willing to make both of these assumptions. Beginning with these two assumptions, we generate a model of "the educative act" in terms of four logical dimensions—each of them referring to how teachers *should* behave rather than to how they *do* behave.

The criterion dimension: The teachers' behavior, which is intentional and purposive, is intended to bring about changes in the behavior of the learner. That is, the teacher does not behave in accidental fashion; rather, he expects that, as a consequence of his behavior, "something will happen in the learner." We refer to this as the criterion dimension, which comprises all of the purposes which the teacher holds in view, and which may more commonly be referred to as "educational aims," "educational purposes," etc.

The procedural dimension: The teacher, in order to bring about the changes specified in the criterion dimension, *does* something. He arranges for materials, he verbalizes in a certain way, he organizes learners in particular ways, etc. These operations are devised with the expectation that they will produce the behavior change desired by the teacher at that time, and they may be referred to as the procedural dimension.

The information dimension: How does the educator devise or select the procedures he uses? The answer, derived on logical grounds, is that he does so on some prior information (or "theory") which suggest that such procedures might be effective—i.e., he does not select his educational procedures randomly. The body of information used by the teacher may be referred to as the information dimension of our model.

The evaluation dimension: The fourth and final dimension for our model is suggested by asking the question of how sure the teacher can be that his procedures, which are devised on the basis of relevant information, will indeed produce the behavior changes expected. Even if he has all the necessary and most reliable data and understands their import, and even if his criterion dimension is clearly defined, can he be absolutely certain that his procedures will be effective? Obviously, the answer is negative. The educational aims held in view by the teacher refer to future events—that is, the educator's procedures are in fact predictions. The point is that we can only talk about the *probability* of the future occurrence of an event. To put this in a more common idiom, the teacher must think of his procedures as *hypotheses*. The contrary viewpoint is that represented by teachers who hold their teaching techniques as inherently valid. If educational procedures have only probable validity, and if such procedures logically are of the order of hypotheses, it follows that the teacher has the moral obligation to inquire into the validity of these hypotheses. That is to say, an inescapable obligation of teachers is that of constantly seeking evidence that bears on the effectiveness of the procedures which they use. This obligation to evaluate constitutes the evaluation dimension in our model.

The model outlined above permits us to conceive of the teaching act as an uninterrupted cycle of inquiry. The teacher, using available information, hypothesizes about procedures, uses these procedures, looks into the behavior of pupils for evidence regarding the validity of the procedures, on the basis of this evidence generates new hypotheses, etc.

The implications of the foregoing conception of what it means "to teach" are particularly clear for educational psychology in the preparation of teachers. The information dimension in our model in large measure comprises what is known about how learning takes place, how behavior changes, etc. This kind of content, by historical convention, falls in educational psychology. Furthermore, the evaluation dimension in our model refers again to operations and techniques which have been assigned to the psychological foundations of education. And once more, the *way* in which one goes about generating hypotheses from previous experience and testing these hypotheses has itself been a proper object for educational psychology. Generally, this suggests that the function of educational psychology courses in teacher education is not merely to pass on relevant information regarding learning and measurement, but to help prospective teachers learn the more difficult skill; that of becoming intelligent hypothesizors about educational events. To put all of the foregoing more concisely, the model suggests that the educational psychology course must address itself to helping the students enrolled in it become more systematic and intelligent *inquirers* into the matter of professional techniques.

The foregoing model, which has been described elsewhere[9] has been used as an orientation by some of the more recent textbooks in educational psychology. This model is the major orientation of the newest textbook in this field, that by Professor McDonald,[10] and the early receptions accorded this book suggest that the general rationale is an inviting one to many instructors in educational psychology. Even more recent discussions in professional organizations in the United States provide some substance for the prediction that this trend will continue.

---

[9] Coladarci, Arthur P., "The Relevancy of Educational Psychology", *Educational Leadership*, 13 (1956), 489-492; "Educational Psychology" *Annual Review of Psychology*, 9 (1954), 189-212; "The Teacher as Hypothesis-Maker", *California Journal for Instructional Improvement*, 2 (1959), 3-6.

To summarize, two interrelated trends can be noted in the teaching of educational psychology in teachers' colleges, with particular reference to the United States. The first of these is a long standing one and is a direct response to long-standing criticisms that the subject matter of educational psychology has not been directly relevant to the kinds of problems faced by teachers in the schools. The change, which has been instituted for some time now, comprises a closer articulation of the course work in educational psychology and the experiences of the prospective teachers in school situations. The second trend is so recent that, indeed, it may not be a trend at all. As a consequence of defining the teaching role as constituting partially an act of inquiry, many persons are viewing the educational psychology course as the appropriate place in which to help the future professional person learn how to go from observed datum to hypotheses about educational procedures intelligently and with calculated tentativeness. The author is of the conviction that should the latter tendency continue, the effect in teacher education will be highly consequential, not only with reference to educational psychology but with reference to the host of methods courses as well.

---

[10] McDonald, Frederick J., *Educational Psychology*, Wadsworth Publishing Company, 1959.

TEACHING OF EDUCATION AND PSYCHOLOGY IN TEACHER EDUCATION

by Dr. M. Varma

DR. M. VARMA, *who has written this thought-provoknig paper, is the Professor of Education and the Head of the Department of Education at the Gorakhpur University in Uttar Pradesh. He has to his credit varied experience as a high school teacher, an intermediate college lecturer, a training college lecturer, a principal of a secondary teacher's college, a senior testing officer at War office, a senior Rehabilitation Officer and currently as a Professor of Education. He has the distinction of studying educational psychology and educational measurement under great experts like the late Sir Godfrey Thomson, James Drever, Thurstone and Harold Gulliksen, and at various times working under them. Dr. Varma has rich experience in the fields of educational research and psychometrics.*

In this paper, Dr. Varma critically examines the present objectives of and teaching practices in Educational Psychology for teachers in training. He shows how insidious hypnotism that textbooks in educational psychology exercise on the Indian teacher of educational psychology and how it tends to kill his originality and initiative, vitiating his specific and immediate objectives of teaching. The latter seeks to help teachers undergoing training know and remember the facts, theories, the conclusions of experiments, the findings of researches and viewpoints of different schools as discussed and presented in the textbooks in educational psychology. It is, in the words of the author, 'all a matter of contential transfer from the page to the head'. Dr. Varma suggests an overhaul of the objectives and current methodology of psychology teaching at the Bachelors' degree level. He emphasises practical experiences to be provided to teachers in training in observing the behaviours of children in the school and at home and relating their observations to the body of facts, theories and findings of educational psychology learnt by them. The prescribed textbooks in educational psychology should be taught alongside the practical experiences which would reinforce, conform and prove the facts of psychology. The author thus gives a new orientation to the "Practical" of Educational psychology.

The author's discussion of some well-known textbooks of educational psychology and their appropriate uses at the Bachelor degree and advanced degree levels would prove useful to those who teach the subject at the different levels.

THE field of education represents one of the most impressive applications of psychology as a pure discipline. Educational psychology as an applied science is strongly characterized by this essential pragmatism, and this in turn suggests to the teacher the methods of teaching it to teachers under training and students of education. Who is being taught—the well-known "John" of our familiar triad of education—also considerably influences our approach as teachers. For example, a person may be taught educational psychology so that he may in turn teach it to other learners. Such an approach could characterize our work at the master's level and beyond. Alternatively a person may be taught educational psychology not as a corpus of organized knowledge but for what use he may be able to make of it in his work where it acquires the likeness of say a motor manual which explains a mechanism so that we may the better *handle* it. For the ordinary teacher under training this is the type of knowledge of facts of psychology that will be required.

Apart from languages (where they serve as compendia of exercises) text books always have certain disadvantages; the chief among these is the deadening of the 'nerve' of the teacher and the killing of initiative. It was said of the late L. L. Thurstone that his originality partly arose out of the advantage of a mind uncluttered by earlier methods and work. The unencumbered intellect had to forge ahead on its own and strike out for itself rather than slide along lines of least resistance. Educational psychology in India has been the victim of our habit of reading text books on our knees—in a prayerful and worshipful attitude. It is not that we are not critical and cannot judge and evaluate texts. There are iconoclasts enough here. It is a more insidious hypnotism that texts have exercised on the Indian teacher of educational psychology. The use of good texts has tempted him to adopt a most objectionable method of teaching the subjects. It is a method which seeks to convey to the learner, i.e. the would-be-teacher, a *content* of knowledge where every fact of psychology is shown related to the work of education. For example, laws of learning are expounded, illustrated and explained so that they are understood and remembered because of their importance in the process of education. The text of educational psychology contains these facts of psychology, which are of significance to the teacher, neatly arranged. The teacher using it simply seeks to help the class know and remember all these facts. Theories and schools are discussed in the same spirit. It is all a matter of contential transfer from the page to the head. This situation and habit of mind resulted from the force of traditional usage, the hold of the text book on our minds and the natural disinclination of the human mind to leave lines of least resistance. This I fear has been the bane and besetting sin of methods of teaching educational psychology to our future teachers.

It is a commonplace to say that skills are learnt by doing and not by reading expert manuals on how to do it. Good cricket is acquired by practice. A book on how to play certain strokes helps the player who practices and tries and experiments with those strokes. The native capacity to put psychology to good use in the school is as much a part of personal endowment and potential as the capacity to become a good cricketer. Training helps to bring out and perfect one's natural form. If it is the *practice* of psychological principles that is in view then mere "bookish theorique" will not do. We must give the teacher-in-the-making ample opportunity to practice the principles of psychology he learns. At present there is no provision for this in our courses. Many universities and training agencies include in the psychology course a set of experiments which are conducted in the classes on an individual or group basis. These experiments primarily exemplify the scientific method of verifying and demonstrating elementary facts of human psychology. They familiarize the trainee with a type of scientific technique. The net result of this is that he realizes with a mild shock that the scientist has a very rigorous way of dealing with his observations. He is duly impressed with the method of discovering truth in science. For experiment is not a set-up for *practice* of psychology, of dealing with others in full awareness of the psychological facts of action and reaction. It is instead a set-up for the discovery and confirmation of scientific truth. We are inclined to believe that this is the practical aspect of the lectures we deliver. It is I fear nothing of the kind. It is merely a short training in the method of scientific investigation, of how to establish a fact under controlled conditions. It teaches the trainee to distinguish between opinion, guess, hypothesis and confirmed fact. It is by all counts a valuable training and must continue but it does not give any training in the *practice* of psychology.

At the Bachelor's degree level this then is the major change to be devoutly wished, viz. that psychology will be developed as a practised art and not merely as a mastered science or corpus of knowledge. Such an objective could require a complete overhaul of our current methodology of psychology teaching. It is suggested in this connection that whatever text book is prescribed it is taught alongside of practical experience which reinforces, confirms and proves the facts of psychology. This can only be done if the teacher is sent to a school to have direct dealings with children. The "Practical" of educational psychology as here conceived consists in observing and noting and relating to a body of theory the behaviour of children in the school and at home. Some principles of psychology are more deliberately tried out and their truth verified. Experimental situations which affect the growth and learning of children adversely will be strictly excluded. For the rest, a student may carry out his practical study as he pleases so long as his findings relate themselves to the facts given in the text book. A "Practical" in this sense is not necessarily an experiment. It may be merely an observational study of some aspect of mental life. It is to be written up simply under a few heads, which explain firstly what psychological fact the teacher wanted to study, how he located it in a functional situation in the school or home, what observations he was able to make and with what conclusions, which take him back to the psychological fact, he wanted to verify. This kind of work can be protean and multitudinous and of the utmost interest to the student of education. Also in such a plan the achievement of students will show a very generous sealter separating the able from the dull. The teacher's work will be to examine each unit of study and discuss it with the student so that misunderstanding and errors are eliminated. Such a course of psychology makes knowledge functional and meaningful to the would-be-teacher and he is liable to be grateful for this training because it develops in him a habit of mind which will be useful to him in his profession throughout.

It will be found that the text books also are of two kinds, written either from the more academic or more practical points of view. Cronbach's *Educational Psychology* and to a considerable extent Hilgard's *Introduction to Educational Psychology* are books written from the practical point of view. They are very much like Hogbern's *Science for the Citizen* and *Mathematics for the Million* or Howton's *Philosophy for Pleasure*. They aim at a wider public and make a popular appeal. Books like Peel's or Gates's *et alia's* are downright, sober, solemn texts with never a cartoon, pictogram or eye-catching illustrative device. If the kind of "practical" that is proposed, is implemented then it is the latter kind of text book that should be used for instruction and the former used as a work book for "exemplifier" giving students insight into the connections between the text and the practicals.

There is another kind of text that is like a source book, *e.g.* Hilgard's *Theories of Learning* or T. G. Andrew's *Methods of Psychology*. This kind of book is of use at the master's level but is worse than useless for the trainee preparing for the bachelor's course. It is polemical and too advanced and often contains critical evaluations of various theories and hypotheses or condensations of recent research. Encyclopedias, indexes, yearbooks and annuals of specialist literature and research also belong here and all this matter must be reserved for the master's and doctoral levels of work.

At these later stages psychology ripens into a full-fledged science and the task of the teacher is to initiate the novice into the arcana of the science of psychology. All the theories and related controversies are critically examined and the capacity to initiate and tackle research by rigorous methods is fully exploited by the requirements of the course. Source book type of literature and literature containing technical matter and research reports is in order and more specially literature dealing with the varied methodology at the disposal of the researcher in education. Guildford's *Psychometric Methods and Fundamental Statistics* and Thurstone's posthumous *Measurement of Value* are the type of books which could be used as texts here for equipping the student with a minimum of necessary technique. Books dealing completely with single topics, e.g. Bell's *Projective Techniques*, Eysencle's *Personality*, Hilgard's *Learning Theories* and Gulliksen's *Mental Tests* provide the staple on which the advanced student must subsist. The mistake that is frequently made by us as teachers of psychology to students of education is to confuse the requirements at the two levels. Not only the ground of the course but its spirit must change as we pass from training to advanced work and instruction in educational psychology. Pragmatism of the Bachelor's stage is replaced by an essential spirit of enquiry and research. The adoption of these differentia and criteria in our work at the two levels will I believe answer our purposes as teachers of educational psychology better than any other superficial improvement in methods of instruction.

RESEARCH AND STUDY IN EDUCATIONAL PSYCHOLOGY

by J. M. Stephens

EXCEPT *for a period of service with the American Air Force during 1944-45, Professor J. M. Stephens, the author of* Research and Study in Educational Psychology *has been teaching at John's Hopkins University since 1930. He is at present the Professor of Education and Psychology at that University. Besides being the author of a standard book on Educational Psychology, Professor Stephens has to his credit several research monographs and papers in education and psychology.*

The author reviews in this chapter some important recent lines of research and study in the field of educational psychology. Quoting Dr. A. P. Coladarci, the author of a previous chapter, Prof. Stephens points out that the need for a central guiding theory in educational psychology will be stressed in any sober account of recent research and study of the subject. And when educational psychology does develop a workable basic theory, such a theory will be closely geared to the major concepts in the psychology of learning. The basic mechanisms of "schooling" by which the school can engage the "learning" mechanisms to be found within the child is the central concern of educational psychology, but these are yet to be discovered. The author refers to the studies made to show how these basic mechanisms of schooling are surprisingly unresponsive to the many attempts that have been made to influence educational attainment by deliberate manipulation of methodology or of organisational or classroom factors. In the face of this problem, it has been suggested by the author in an earlier paper published in 1956 that in our search for the basic mechanisms of schooling, we should look to a group of widespread, primitive and spontaneous tendencies whereby many people automatically, compulsively, hold forth about their interests and, in an equally compulsive fashion accept or reject the statements of others regarding the subjects of their interests. Turning from the above central problem of educational psychology to the many important specific problems, the author refers to the "tremendous embarrassment of riches". He cites the studies on the re-analysis of the intellect by Guilford, the problem of intelligence and the role of nature and nurture on intelligence and the special aspects of intelligence by a number of workers. Reference is also made to the studies on concept formation based on and to verify Piaget's theories.

on the vast field of mental hygiene and personal development and on the teaching of machines advocated by B. F. Skinner.

As the title might imply, the chief purpose of this paper is to review some important recent lines of research and study in the field of educational psychology. Before getting down to business, however, the reviewer may be allowed some few words to congratulate and advise his younger colleagues in Indian Educational Psychology. Congratulations are in order, not only in view of this important publication, but in the light of the rapid increase in Indian contributions that appear in the vigorous new national journals and in the older journals of the world community. Advice, although seldom in order, is probably inevitable and is especially to be expected from one who has spent half a lifetime in the field.

It is true that any rapid expansion such as that now going on in India imposes inescapable practical demands. As Laljani (1956) points out, there must be adequate tests and there must be trained teachers available for the classrooms. Kamat's (1958) revision and the recent studies of Desai (1957), Sharma (1957), Chatterjee (1956) and Chaudhary (1957) are clearly directed to the problem of providing tests for Indians schools, whereas Oad (1956) and others link up national problems in teacher training with the staggering array of studies conducted elsewhere (Barr, 1958, Morsh & Wilder, 1954). It is reassuring to see that, while meeting these pressing practical demands, Indian psychologists have been able to do a great deal of work in such fields as guidance and the interests of children.

It is greatly to be hoped that the stern practical demands will not reduce or defer a natural concern for basic theory in educational psychology. Such a basic theory, so necessary in all quarters, becomes especially valuable as a guide for the many decisions that must be made in a program of rapid expansion. Interestingly enough, the rapid expansion, which so greatly needs the guidance of basic theory, also provides, by some fortunate arrangement, unique opportunities for contributing to basic theory. In such an expansion, where everything cannot be done at once, steps can be taken in ordered fashion so as to permit a crucial test of the usefulness of the facilities being added or strengthened. The information gained, so important in its own right, would have tremendous value in assessing the validity of some current theories regarding the basic nature of the educational process.

The urgent need for a central guiding theory in educational psychology is not merely something to be stressed in a congratulatory message or in an avuncular exhortation. The need for such theory will be stressed in any sober account of recent research and study in the field of educational psychology (Coladarci, 1958, p. 204; Wiseman, 1959).

It is to be expected that when educational psychology does develop a workable basic theory, such theory will be closely geared to the major concepts in the psychology of learning (Deese, 1958). From the psychology of learning we should be able to say, "If you do thus and so to a child, under these circumstances, he can be expected to learn." At this point, it becomes the task of the educational psychologist to determine the forces within the school which lead it to do "thus and so," and which lead it to provide the necessary circumstances, and thus permit it to bring about learning. In one sense, it is our task to discover the basic "schooling" mechanisms by which the school can engage the "learning" mechanisms to be found within the child. The study of such basic mechanisms, available to a social institution such as the school, is held to be the central concern of educational psychology. It is to the explanation of these essential mechanisms of schooling that a basic theory of educational psychology should be directed.

The basic mechanisms of schooling are still to be discovered. We do know now, however, that whatever they may be, they are surprisingly unresponsive to the many attempts that have been made to influence educational attainment by deliberate manipulation of methodology or of organizational or classroom factors. Nachman & Opochinsky state as a matter of common knowledge, "Reviews of teaching research have consistently concluded that different teaching procedures produce little or no difference in the amount of knowledge gained by the students." Although these authors feel that the situation may change in the future, there is no question that their categorical statement reflects the trend up to this point. There are many recent examples. As far as the typical examination can reveal, college students taught by television learn no more and no less than students taught by traditional methods (Seigel & Macomber, 1957). At the elementary school level and at the college level, alike, pupils in large classes continue to learn as much as comparable students in smaller classes (Spitzer, 1954; Rohrer, 1957; Siegel & Macomber, 1957). It is even true that when a teacher is responsible for two classes or forms within the same room, there is no academic or social loss to the pupils involved (Adams, 1953). At the grammar-school level, there appears to be no clear-cut advantage for the large well-equipped school over its smaller more modest counterpart (Anderson, Page & Smith, 1958). Both younger and older pupils studying through correspondence courses do as well on examinations as comparable pupils having at their disposal all the advantages of classroom instruction (Childs, 1954; Dysinger & Bridgman, 1957; Parsons, 1957). Along with the established equivalence of the lecture and the discussion method, there has been a recent challenge to the superiority of the democratic approach over the more authoritarian climate (Anderson, 1959).

The negative or paradoxical results so briefly mentioned, along with many similar results not included, would seem to suggest that the basic mechanisms of schooling must reside in some fairly primitive and widespread substratum of the teaching process. After all, the scholastic situation does exert some effect. Students exposed to schooling of some sort learn more than they would otherwise. Yet the basic mechanisms by which this achievement is induced appear almost impervious to the procedural and administrative changes that have been introduced.

In the face of this problem, it has been suggested (Stephens, 1956) that in our search for the basic mechanisms of schooling, we should look to a group of widespread, primitive and spontaneous tendencies whereby many people automatically, compulsively, hold forth about their interests and, in equally compulsive fashion, accept or reject the statements of others regarding the subjects of their interests. Such natural tendencies operating in any adult associating with children would inevitably lead him to stimulate his charges with respect to the subjects of his interest, and to guide, correct, or reinforce their statements with respect to such subjects. These widely-prevalent tendencies, indeed, would account for the very existence of schools and for their historical emergence as institutions promoting the survival of the group. Within the schools thus established, these same spontaneous tendencies would account for much of the work that is actually accomplished.

At first glance such an array of negative results may seem to be discouraging or defeatist. Actually, however, both these results and the related theory of spontaneous schooling offer tremendous encouragement, especially in any region struggling with the problem of limited facilities. The results suggest, and the theory claims, that educational attainment does not spring from elaborate facilities. On the contrary, such attainment seems to come exclusively from the hour-by-hour or minute-by-minute activities of the classroom teacher. Educational attainment of some degree is almost inevitable when an informed and communicative adult regularly consorts with growing children.

In turning from the central problem of educational psychology to the many important specific problems within the field, we are faced by a tremendous embarrassment of riches. In the 3500 educational serials listed by UNESCO (1957) and in the 550 journals regularly surveyed in Psychological Abstracts, there may be as many as 20,000 articles each year that might well come under the heading of educational psychology. Only a minute fraction of this work can be noted here. Some glimpse of the vast amount of material excluded may be had by consulting the *Review of Educational Research*, the *Annual Review of Psychology*, and *Psychological Abstracts*.

In his re-analysis of the structure of the intellect, Guilford (1959) has stressed creativity and originality. In describing this enlarged version of intelligence he suggests that even Kelly and Thurstone were much too penurious in the number of factors they suggest. The structure proposed by Guilford calls for three separate dimensions. There is one dimension of five steps along which we may plot the different mental *operations*. These consist of becoming aware of entities, remembering them, thinking about them divergently (many possible solutions), thinking about them convergently, and evaluating them. There is a second dimension of six steps involving the *products* or types of entities that may be dealt with. The operation of remembering, for instance, may be applied to units, classes, relations, systems, transformations, or implications. A third dimension of four steps covers the *content* that may be used. The contents produced by any operation may be symbolic, figural, semantic, or behavioral. In this three-dimensional solid, each of the resulting 120 cells calls for a separate factor. So far, a fair number of these 120 factors seem to have been identified or partially identified, but there are still many gaps in this ambitious "periodic table."

The problem of intelligence has also been treated extensively in a symposium (1957) in the *British Journal of Educational Psychology*, covering the definitions of intelligence (Miles), nature vs. nurture (Maddox) and the effects of coaching (Heim & Watts). Sir Cyril Burt (1958) has eloquently and forcefully presented the evidence showing the effect of heredity on intelligence. He distinguishes between such pure native intelligence on the one hand and a more empirical scholastic aptitude on the other.

Along with the study of general intelligence, there has been much concern about some of its special aspects. Just prior to his death, Terman had completed most of the materials on the study of his gifted people as they settled into the middle adult years. The results (Terman & Oden, 1959) show the continued excellence of the gifted in their careers especially in academic and professional work. As parents, spouses and citizens they would be rated somewhat better than the typical college population. With respect to serious matters such as alcoholism, mental breakdown, or suicide, they were almost on a par with the college population.

Concept formation has been studied with increasing frequency. Scholars in the English-speaking world are much in debt to Berlyne (1957) for his lucid account of Piaget's recent work. Peel (1959) and Lovell (1959) in the United Kingdom have some confirmation of Piaget's view of the primacy of topological over Euclidean space perception. In Japan, Ikeda (1957) and Shimizu (1957) have also repeated some of Piaget's studies, using a larger number of children. They have reported substantial agreement with the important parts of Piaget's theory.

Wilson (1958) describes some devices that have been used to stimulate originality and creativity. In a recent survey of problem solving, Duncan (1959) has expressed doubt that there is any clear-cut distinction between problem solving or creative thinking on the one hand and the more prosaic processes such as memory and learning on the other.

Academic failure has been a problem of international concern. In the U.S., academic failure is the most frequent reason for referral to child guidance centers (Gilbert, 1957). Schenk-Danzinger (1957) sees little chance of reducing the present failure rate of about 30 per cent in the Austrian schools. In Belgium, (Hotyat, 1957), about 15 per cent of children are retarded by one year at age eight and 21 per cent are retarded by age eleven. According to Schonell (1957), the corresponding figures for Australia are 7 per cent and 11 per cent, although the failure rate for children under 85 IQ is over 40 per cent.

The study of mental hygiene and personal development has been by no means neglected but within the limits of this paper an area so large and so diffuse can only be mentioned with no attempt at even a partial summary. Both the World Health Organization (1956-57) and the World Federation for Mental Health (1958) have dealt extensively with the problem of mental health. Jahoda (1958) has attempted to work out a concept of positive mental health. She faces the difficulty of framing a statement that would be acceptable in a variety of national cultures. *The British Journal of Educational Psychology* has conducted a symposium on the development of moral values in children covering both the dynamic bases for such values and some of the more practical aspects (Wheeler, 1959).

Within the classroom, two new lines of activity have received considerable attention in the United States. The central position of motivation has been challenged (Deese, 1958). Although some motivation is necessary to get the student into the situation in which learning may occur, and to get him to go through the motions necessary for learning, there is some doubt that motivation is an essential ingredient in the learning process itself. At the other extreme, there is some evidence to support Spence's contention that in any situation in which mistakes are likely to occur, strong motivation may actually hinder learning (Pickerel, 1958).

There is considerable interest, and some experimentation (Porter, 1957), in the teaching machines advocated by B. F. Skinner. In addition to freeing the teacher from many routine tasks, it is claimed that these machines permit a more precise schedule of reinforcement, avoid the aversive stimuli so likely in classroom teaching, and present an almost perfect solution to the problem of providing for individual differences in rates of learning.

To one reviewer at least, these seem to be the important current activities and issues in the field of educational psychology. Let us hope that within the next two or three decades these issues,

issues, neatly solved, will have given way to a few central problems, and that the solution of these new problems will bring some order into our present chaotic discipline.

BIBLIOGRAPHY

Adams, J. J., "Achievement and Social Adjustment of Pupils in Combination Classes Enrolling Pupils of More Than One Grade Level", *Journal of Educational Research*, 47, (1953), 151-155.

Anderson, K. E., Page, T. C., & Smith, H. A., "A Study of the Variability of Exceptional High School Seniors in Science and Other Academic Areas", *Science Education* (1958), 42, 42-59.

Anderson, R. C., "Learning in Discussions: A Resume of the Authoritarian-democratic Studies", *Harvard Educational Review* (1959), 29, 201-215.

Barr, A. S., & Jones, R. E., "The Measurement and Prediction of Teacher Efficiency", *Review of Educational Research*, (1958), 28, 256-264.

Berlyne, D. E., "Recent Development in Piaget's Work", *British Journal of Educational Psychology* (1957), 27, 1-12.

Burt, Sir Cyril, "The Inheritance of Mental Ability", *American Psychologist*, (1958), 13, 1-15.

Chatterjee, B. B., "An Experiment with the Mosaic Test on Teachers-under-training", *Educator*, (1956), 10, 175-193.

Chaudhary, K., "Scaling or Standardization of Teachers' Marks", *Journal of Educational Psychology*, (1957), 15, 27-32.

Childs, G. B., "A Comparison of Supervised Correspondence Study Pupils and Classroom Pupils in Achievement in School Subjects", *Journal of Educational Research*, (1954), 47, 537-543.

Coladarci, A. P., "Educational Psychology", *Annual Review of Psychology*, (1958), 9, 189-212.

Deese, J. E., *Psychology of Learning*, Rev. Ed., McGraw-Hill, (1958).

Desai, D. M., "Reorienting our Examination", *Journal of Educational Psychology*, (1957), 15, 22-26.

Duncan, C. P., "Recent Research on Human Problem Solving", *Psychology Bulletin*, (1959), 56, 397-429.

Dysinger, D. W., & Bridgman, C. S., "Performance of Correspondence-study Students", *Journal of Higher Education*, (1957), 28, 387-388.

Gilbert, G. M., "A Survey of 'Referral Problems' in Metropolitan Child Guidance Centers", *Journal of Clinical Psychology*, (1957), 13, 37-42.

Guilford, J. P., "Three Faces of Intellect", *American Psychologist*, (1959) 14, 469-479.

Hotyat, F., "Le Retard Scholaire en Belgique", *International Review of Education*, (1957), 3, 185-191.

Ikeda, Sadami, "A Study of the Development of Children's Concept of the Past", *Japanese Journal of Educational Psychology*, (1957), 4, 203-210.

Jahoda, Marie, *Current Concepts of Positive Mental Health*, Monog. Series Joint Commission on Mental Illness & Health. No. 1, (1958), Basic Books.

Kamat, V. V., *Measuring the Intelligence of Indian Children*, Oxford, 1958, (3rd. edition).

Laljani, M. R., *Evaluation in Basic Education*, Univ. Press, Institute of Rural Education, (1956).

Lovell, K., "A Follow-up Study of Some Aspects of the Work of Piaget and Inhelder on the Child's Conception of Space", *British Journal of Educational Psychology*, (1959), 29, 104-117.

Morsh, J. E., & Wilder, Eleanor W., "Identifying the Effective Instructor: A Review of Quantitative Studies, 1900-1952", U.S. Air Force Personnel and Training Research Center, Lackland Air Force Base, San Antonio, Texas. *Research Bulletin, A F P T R C-T R*-(1954), 54-44.

Nachman, M., & Opochinsky, S., "The Effects of Different Teaching Methods: A Methodological Study", *Journal of Educational Psychology*, (1958), 49, 245-249.

Oad, L. K., "Essential Qualities of a Successful Teacher", Part II. *Educator*, (1956), 10, 154-171.

Parsons, T. S., "A Comparison of Instruction by Kinescope, Correspondence Study, and Customary Classroom Procedures", *Journal of Educational Psychology*, (1957), 48, 27-40.

Peel, E. A., "Experimental Examination of Some of Piaget's Schemata Concerning Children's Perception and Thinking, and a Discussion of Their Educational Significance", *British Journal of Educational Psychology*, (1959), 29, 89-102.

Pickerel, E. W., "The Differential Effect of Manifest Anxiety on Test Performance", *Journal of Educational Psychology*, (1958), 49, 43-46.

Porter, D., "A Critical Review of a Portion of the Literature on Teaching Devices", *Harvard Education Review*, (1957), 27, 126-147.

Rohrer, J. H., "Large and Small Sections in College Classes", *Journal Higher Education*, (1957), 28, 275-279.

Schenk-Danzinger, L., "Schulorganisation and Schulversagen", *International Review of Education*, (1957), 3, 174-184.

Schonell, F. G., "Problems of Retardation in Australia", *International Review of Education*, (1957), 3, 192-199.

Sharma, T. R., "Construction of a Hindi Writing Scale for Primary School Children", *Educational Psychology*, (1957), 4 (1) 24-31.

Shimizu, Junko, "A Study of the Language and Thought of the Child", *Japanese Journal of Educational Psychology*, (1957), 4, 233-247.

Siegel, L., & Macomber, F. G., "Comparative Effectiveness of Televised and Large Classes and of Small Classes", *Journal of Educational Psychology*, (1957), 48, 371-382.

Spitzer, H. F., "Class Size and Pupil Achievement in Elementary Schools", *Elementary School Journal*, (1954), 55, 82-86.

Stephens, J. M., "Nondeliberative Factors in Teaching", *Journal of Educational Psychology*, (1956), 47, 11-24.

Symposium "Contributions to Intelligence Testing and the Theory of Intelligence", *British Journal of Educational Psychology*, (1957), 27, 153-210.

Terman, L. M., & Oden, Melita H., *The Gifted Group at Mid-life*, Genet. Stud. Genius Vol. 5, Stanford University Press, (1959).

UNESCO "An International List of Educational Periodicals", *Educational Studies and Documents*, No. 23, (1957).

Wheeler, D. K., "Punishment, Discipline and Educational Objectives", *British Journal of Educational Psychology*, (1959), 29, 118-127. (No. VI in a Symposium on the Development of Moral Values in Children).

Wilson, R. C., *Creativity*. Natl. Soc. Study Educ. 57th Yearbook Part II, 108-126, (1958).

Wiseman, S., "Trends In Educational Psychology", *British Journal of Educational Psychology*, (1959), 29, 128-135.

World Federation for Mental Health, *Mental Health in Home and School*, London, H. K. Lewis, (1958).

World Health Organization, *Discussions on Child Development*. Int. Univ. Press Inc., (1956-57).

THE PROBLEM OF SELECTION

by Rev. T. N. Siqueira

THE *author of* The Problem of Selection *is the well-known educational critic and writer, Rev. T. N. Siqueira. His critical analysis of many a burning problem in Indian education published in the leading educational journals of the country is well known. Rev. Siqueira began teaching in 1922 in a University College, was the Rector and Principal of the St. Xavier's College, Palamcottah from 1942 to 1948 and is at present the Professor of English at St. Joseph's College, Tiruchirapalli. Our author came to prominence in the country as an educationist with insight and imagination when he started editing in 1935, The New Review, Calcutta.*

Here in this chapter the author examines with his usual candour and critical acumen the present methods generally employed for selection of students for courses of study, especially for professional training. These methods which lack system or sense result in the colossal wastage of human wealth for want of guidance and firmness—guidance in showing what one is fit for and firmness in screening the unfit and diverting them into what is really good for them.

Parents cannot be expected to postulate both competence and impartiality which are needed of those who select and though guidance workers may have these attributes, they do not know the candidates sufficiently well. The author after examining the practical and psychological aspects of the case and also the practices in the West comes to the following conclusion: "India may learn to use, not by copying but by adapting to our very different circumstances both intellectual and social, some of the techniques tried with some success in the West: an examination to begin with, but not to end with, intelligence and aptitude tests used with care and caution; teachers' assessments and reports; and, before and after all, the conviction that the selector is dealing with unique, individual children, not with mere lists of marks and scores and the need to combine all available sources of information on each child's aptitudes and interests, including parental aspirations."

I

IN undertaking to write about 'selection', not for examinations or jobs, but for courses of study and especially for professional training, I am trying to grasp a nettle, or making friends with a hedgehog. No single subject connected with education treads on so many corns as this. No wonder it has been left alone so far in our non-violent ahimsaic country, where such ill-assorted factors as marks secured in the qualifying examination, certificates private and public, recommendations open and hidden, pressure on many fronts and at many levels, and finally financial ability to pay for education, battle together for victory till the young hopeful is landed into the desired college or course. This method has the incomparable merit of not causing any friction or raising any questions in Parliament. At the end of a frantic month of 'trying to get admission' the list of those admitted is finally published, even in the papers, and both winners and vanquished return home exhausted but satisfied, the former at having won through such odds, the latter at having tried their best (often their 'level' best).

But those who think of the welfare of India and of the many young men and women whose whole future and therefore also whose happiness is so sportingly decided have a qualm of conscience whether both for the individual's own sake and for that of the country this is the best method of finding the best courses and professions for our youth and the best youth for the various courses and professions. The individual's point of view is not to be despised, but should even be the first consideration, since education is primarily for the good of the educand who has a right to be given the opportunity suitable for the development of all his God-given but so far latent potentialities, according to the circumstances of his parents and society, whether he is useful in the ordinary material sense of the word or not to them and to society (though in the interest of truth and completeness it must be said that a truly educated man is sure to be very useful to his social group and country in many imponderable but none the less real ways). But it must also be remembered that education is a social function, for willy-nilly every individual is a member of society and every child will help or hinder the progress of his country according as he is well or ill educated; and in the higher rungs of the ladder, especially in the universities and professional colleges, the greater share of the burden falls on the community, which alone can afford the qualified staff, the libraries and laboratories and playgrounds and hostels which belong to the essence of such education.

The alternative to the present system, which I have described, is some kind of selection, based, not on ability to pay or heredity (the occupational specialization of caste) or uplift of the backward, but on fitness for the subject to be studied or the profession to be taken up. The reason for seeking such an alternative will be generally admitted: by the time-honoured method not only are the fittest not always able to enter but several of those who do enter are not fit and therefore do not succeed, thus causing frustration to themselves and loss of precious human wealth to the country. In certain professions, like medicine and engineering and, above all, teaching, where very definite qualities are required, the harm done materially and morally by unfit or inept members is incalculable. Mere desire or ambition either in the young man or woman or in their parents and well-wishers is not enough. Still less is mere ability to pay for it enough qualification, nor influence. Some kind of selection of the fit, without fear or favour, must be invented that shall be at once objective and impartial, scientific and still sufficiently elastic to allow for the exceptions which are to be expected in any human problem where so many variable factors come into play.

II

So far there is complete agreement that selection is necessary. Difficulties arise as soon as we inquire by whom this selection is to be made, and still more when we ask *how*.

It is obvious that two qualities are required in those on whom selection shall depend—competence and impartiality. Parents and relations (actual and would-be) cannot be expected to possess both these qualities together. Utter strangers, like professional psychologists or career-masters or guidance experts or vocational guides, may have both competence and impartiality but cannot know the candidate sufficiently to be of real help. Nor is an impersonal examination like that used in England on the *eleven-plus* group satisfactory in itself unless it is eked out with personal knowledge of the child such as only a teacher can have. It must be remembered that we are here dealing with selection, not as a reward for past achievement, but as a pointer to future usefulness, that we are seeking to know the student's *aptitude* for a course or profession *to be taken up*, not his success in a course which is over.

To judge this correctly the selector or selecting body should know both the potentialities of the candidate and the qualities required in the course or profession he wishes to enter. The latter knowledge is normally found only in one who has himself undergone the course or practised the profession with outstanding success; the former is likely to be found only in those who have taught and dealt with the student for the last few years at least, if not for more. In the small classes into which the school-children of a form or standard are divided it is not difficult for the class-teacher, who is with them for more hours in the week than any other, to know them personally and observe their natural aptitudes and characters—much more, perhaps, from what they do in the intervals of school or on the playground or when they are not observed than in the formal strait-jacket of the class-room. If he is interested in the true welfare of all his pupils as if they were his own children—and that is no more than is expected of every teacher worth the name—he is the best judge of the student's past and present attainment. The prognosis of the future can be entrusted to an eminent and experienced member of the faculty or profession the candidate wishes to enter. Can these two qualities be found together in the same person or group of persons and the whole responsibility of selection be entrusted to them?

As I have said elsewhere with inexpressible sadness, we in India have not yet begun to trust our own teachers (which depresses them much more than low pay) while we trust merchants, politicians, and fortune-tellers . . . and, above all, those examinations where thousands of candidates are judged within a few warm summer weeks by unknown examiners (whose chief claim to trust is their anonymity). No objective and scientific selection can ever be made unless we change our attitude to our teachers and trust them to give an impartial and competent opinion about their pupils, especially in small classes where personal contact and therefore knowledge is greater than in the large classes of universities where the lecturer cannot, even if he tries, know his students individually within the classroom.

But besides the teacher (in collaboration with the headmaster who will have an over-all view of the student) there must also be an expert to judge the fitness of the candidate for *this* course or profession rather than any other. Our Indian experience of Public Service Commissions has not been wholly successful in this respect, for though they may generally be retired men who have attained 'calm of mind, all passion spent', they are not always competent interviewers or judges of the requirements of the course or profession in question. Faithful service of the Government (which is often indistinguishable from the Party in power) does not always go with either high intelligence (which alone can detect intelligence in others) or knowledge of the psychology of the interview or ability to assess the aptitude of a candidate in a short time, making due allowance for nervousness, tiredness, fright, allergy, and other psychological disturbances. Perhaps therefore a person or body of persons should be entrusted with this delicate task of selection who, helped by the expert advice of the teachers who know the candidate best in the recent past, also combine in themselves the experience of practice in the line with the psychological knowledge which may reduce as much as is humanly possible the margin of error in assessing his aptitude for the course or profession concerned.

To find such a body of men may not be at all easy when the number of candidates for every stage of education in India is so large that even written examinations become all but impossible as selection techniques. How then can interviews or *viva voces* be arranged for such staggering numbers if they are to be conducted by competent and impartial judges? In a qualifying examination, where a certain minimum is required for a pass which declares a student fit for a higher course or a promotion from one class to the next, the difficulty of judgment may not be insuperable, though immediately after this examination there will arise the other difficulty of choosing from among the many declared fit the few who can be actually admitted—a difficulty annually experienced by principals of colleges and headmasters of schools who get more applications for admission (all possessing the necessary qualification) than they have seats to fill. But there are competitive examinations and interviews for posts where some measure of success could be hoped for if the number appearing for them was small. This was so in the old Indian Civil Service examination when it was held in London and even when it was partially held at Delhi. But when we think of the 11,500 who have entered the lists of the I.A.S. examination in a year (September 1959), we can only despair of ever solving the problem of selection even in a service which is supposed to need the best men and women in the country.[1] How can the written papers of such an immense number of candidates be validly and consistently marked when so many different examiners are working against time, in the middle of the year, in the midst of their whole-time duties elsewhere, to assess, not absolute attainment, but *relative* merit? And even if the written papers are correctly assessed, where can the interviewers be found with the competence and the time to attain moderately good results in the final selection of the personnel?

III

Difficult as it is to decide on and find the persons to carry out a suitable method of selection, it is immensely more difficult to say *how* it is to be done, the technique which may give the least unsatisfactory results both for the individual and for society. Before doing so, we should distinguish between courses which do not require very special qualities and those which do. General intelligence is a common factor needed in all stages including the very lowest—the primary school, which is compulsory and universal, or ought to be. Intelligence tests, adapted to local conditions of language, age, and stage of education, can profitably be administered if, and only if, they are not made to prove more than they really can and are used by competent people.

When we go further and prescribe tests of aptitude for various subjects and professions, we cannot be too cautious. On the one hand, there is the undoubted fact that no two men are exactly the same in the sum-total of their aptitudes and that therefore no two men are equally fit for the same job or course of study. But this fact should not be pressed to its extreme conclusion, since there are not as many available careers as there are individuals. On the other hand, there are psychologists of standing, like Professor P. E. Vernon, who think that a high Intelligence Quotient can make up for the want of many a special aptitude for most professions and courses of study.

The study of differences in aptitude has been made in several schools of psychology, especially in the U.S.A. One well-known example is the Human Engineering Laboratory founded by Johnson O'Connor of Harvard University, which has isolated seventeen aptitudes and tested thousands of men and women (thirty thousand a year, on an average) for these qualities in order to advise them on the kind of work most suited to them. The teacher, the writer, the executive, the engineer, the doctor (physician *or* surgeon), the artist, the lawyer, the banker, the factory worker, the research worker, the salesman, the office worker, the entertainer—each has his own exacting qualifications and is a square peg that must be put into a square hole if he is to be happy and useful. To quote an interesting book entitled *Know Your Real Abilities*: 'The individual whom the Human Engineering Laboratory measures gets an inventory of his inborn traits, which in turn means a better understanding of his abilities and what he is equipped best to do, which, after all, underlies much of our adjustment and happiness in life.' While we would not take too mechanical and rigid a view of human aptitudes or leave no room for the unpredictable in man, no true Indian but must agree with the authors of this book that 'the waste of talent in the world today is appalling . . . we have such rich and undreamed-of resources in our human assets—their development could mean increased personal attainment bringing more happiness and good into the world'.

---

[1] I say 'supposed' because I don't admit that the best men and women are needed for the work normally done by the I.A.S. Only a few posts within this gigantic machinery require the best talent, but these can be more efficiently filled by a close watch of the work done in the lower rungs of the ladder.

In England selection has been tried chiefly for the different types of secondary schools—public, grammar, modern, comprehensive, technical—to which entrance, according to the Butler Act, is by an examination. This selection has all the greater importance in the public eye as the prestige attached to the various types of school to which it leads is different and so too is the social level connected with them in the popular estimation. Much discussion is still going on not only among parents but even among psychologists and teachers on the objective and scientific value of this selection: in a country so socially conscious as Britain the harmonics of every measure are more important than the measure itself. Much is therefore said for and against the highly efficient techniques evolved in the last fifteen years to render selection as satisfactory as any selection can be. The one-day examination at eleven—*plus* has been supplemented with teachers' assessments of each child's aptitudes and attainments; but, as Dr. Dempster says in a recent survey: 'It is the assessments and opinions of the teachers that are most awkward to handle and yet are so very important.'

IV

We in India may learn to use, not by copying but by adapting to our very different circumstances both intellectual and social, some of the techniques tried with some success in the West: an examination to begin with but not to end with; intelligence and aptitude tests used with care and caution; teachers' assessments and reports; and, before and after all, the conviction that 'the selector is dealing with unique, individual children, not with mere lists of marks and scores' and the need 'to combine all available sources of information on each child's aptitudes and interests, including parental aspirations'. To the complexity and difficulty of the problem in other countries must be added in India the heterogeneous composition of our society, with its millennial layers of caste and community, some forward and others backward (among whom are those who call themselves 'most backward'), some with centuries of education behind them and others not even literate in any language, some well-off and others unable to spend anything on school-fees or books or even the midday-meal at school. It is the duty of the State to raise the backward by giving them some advantages in the race for higher education and especially professional education, so that they may not remain backward for ever. This has its repurcussions in the selection of students for the various courses and professions. If a uniform objective standard is expected of all, whatever be their social, economic, and cultural background, whatever their caste or community or tribe, the kind of homes they come from and the occupations of their parents, they have very slender hope of ever rising above their present level. On the other hand, if unfit candidates are admitted to higher studies and especially to the professions like medicine, engineering, and teaching, on which the life and safety and true welfare of many depend, the whole nation will suffer for the sake of a laudable desire to level up and uplift the backward. This would not be in the true spirit of democracy, for democracy is nothing if it does not respect and make allowance for individual differences and group levels; nor, finally, would it be a real service to the unfit thus selected, for it would only make them more conscious of their inferiority and more frustrated to see that they cannot compete with what Dr. Michael Young calls the 'meritocracy'. The solution of this specially Indian problem seems to be a wise combination of the desire to raise the poor and give them equal opportunities for education to the highest stage with an equally great zeal for the common good of the whole country. In selecting for the lower courses and jobs there may be little harm in giving a 'handicap' to the backward; but in the strictly competitive examinations where much general good or evil will follow the choice of the *best* or the just good, merit alone (in the comprehensive sense of not only academic performance in examinations but also athletic, aesthetic, social, and other aspects of personality) should be considered.

I have only touched the fringe of a vast and thorny problem. If the U.K. and the U.S.A. have not yet solved it in spite of grappling with it for close on a quarter of a century, we in India who have not yet tried to do so are sure to take much longer in the vastly more complicated circumstances of our immense and heterogeneous society. Meanwhile the stream goes on and human wealth is being wasted for want of guidance and firmness: guidance on what one is fit for, firmness in screening the unfit and diverting them into what is really good for them.

BIBLIOGRAPHY

Secondary School Selection, edited by P. E. Vernon.
Dampster, J. J. B., *Selection for Secondary Education.*
Whilde, N. E., *The Application of Psychological Tests in Schools.*
Broadley, C. V. and M. V., *Know Your Real Abilities.*
Freeman, Frank S., *Theory and Practice of Psychological Testing.*

ACTION RESEARCH TO IMPROVE INDIAN SCHOOLS

by Stephen M. Corey

DR. STEPHEN M. COREY, *the author of* Action Research to Improve Indian Schools *is Professor of Education, Teachers' College, Columbia University. After receiving his doctorate from the University of Illinois in 1930, Dr. Corey taught educational psychology at the Universities of Nebraska, Wisconsin and Chicago and Teachers' College, Columbia University. He was Dean of Teachers' College from 1955 to 1959. During 1959-60 Dr. Corey worked as a consultant in educational psychology in India under the International Co-operation Administration contract with the Ministry of Education, Government of India and was attached as a Visiting Professor to the Central Institute of Education, Delhi.*

The author here distinguishes between two methods of bringing about improvements in schools. There is the common approach where the expert studies the school programme and prescribes improvements which teachers might translate into action. There is, however, the more dynamic approach whereby teachers are encouraged to study their own problems, singly or in groups, and try to do something about them. The latter method of conducting action research is very much needed in India because teachers, in view of tradition and long practice, have developed routine habits in dealing with routine school programmes. Dr. Corey shows how in its relation to classroom teaching action research approach subjects a certain scientific sequence of activities like general dissatisfaction, problem definition, problem analysis, action hypothesis *and the* real experiment. *If the teacher is the positive agent in all our educational reform and reconstruction, we have to bank on his active thinking about educational problems. It is here that action research makes a clean sweep over other endeavours of improvement of school programmes.*

THERE are two rather different approaches to bringing about improvements in schools. The more common approach has the expert study the school program, decide what needs to be changed, then direct teachers to do differently. This way of making schools better works fairly well if the curriculum is static and teachers are not very resourceful, imaginative or independent.

Another method of effecting improvements in schools is to encourage teachers to study their own problems, singly and in groups, and try to do something about them. This approach to bringing about desirable changes in curricula and teaching method works best under circumstances that make continuous curriculum revision desirable. The method appeals most to teachers who have resourcefulness and imagination and become restive when each of their acts is directed by some one else.

When teachers are encouraged and supported in their study of their own problems, and when they undertake this study carefully and objectively, they are conducting action research. Action research is research you yourself do to improve your own practices. The kind of educational research we have heard about for so long is usually conducted by the experts to improve some one else. The assumption is made that if the results of these studies conducted by the well-trained investigator come to the attention of teachers, the teachers will change their classroom practices to make these conform more closely with the research findings.

This happens now and then but not very often. Each of us is witness to the fact that we know much better than we do. Just reading about a research report, or hearing about it in a lecture, has little influence upon the way we teach *unless* we are already dissatisfied with some aspect of what we are doing and the research we read comes at just the right time and suggests something better to try. This kind of coincidence is rare.

When teachers conduct their own research, when they study their own problems and conduct experiments to test out their own ideas, change is inevitable. Experimentation *means* change, and the change is most apt to represent real improvement if the process whereby the teachers study and experiment has the characteristics of scientific method.

In its relation to classroom teaching the action research approach suggests a certain sequence of activities like that given below:

General dissatisfaction: A teacher is not going to study his teaching to improve it unless *he* is dissatisfied with the degree to which he is achieving his teaching purposes. Self dissatisfaction has quite different effects from learning that some one else is dissatisfied with you. If this dissatisfaction is very general, however, not much is apt to happen.

Problem definition: Out of the rather vague general dissatisfaction the teacher differentiates a more specific "pin pointed" problem about which he may be able to do something. He moves from dissatisfaction with his teaching of English, for example, to dissatisfaction with the way he teaches English pronunciation.

Problem analysis: Next the teacher does his best, using all the resources he can lay his hands on, to identify the causes for his less than satisfactory teaching; why, for example, do many of his pupils pronounce English words so poorly. This analysis is of great importance in action research because it is to eliminate or reduce the influence of one or more of these major causes that different teaching materials or methods are tried.

Action hypothesis: In light of the best analysis he can make of the probable reasons for his unsatisfactory teaching, the teacher next formulates and tests in his imagination, and in conferences with his associates, an "action hypothesis". He may say: "If I can take steps to improve their spelling of English words, my pupils will pronounce the words better." This action hypothesis, quite obviously, is related to the teacher's analysis that suggested poor spelling as a likely cause for poor pronunciation. In the above form, too, the hypothesis is general. If it seems promising, however, the teacher will formulate it with greater care, and specify in some detail the actions to be taken to improve spelling.

The Experiment: After deciding upon an action hypothesis promising enough to be tested, the teacher designs an experiment that will let him know whether or not the hypothesis is suppored or rejected by the 'logic of events'. He gets some "base line data" describing the spelling and pronunciation of his pupils *before* taking action to improve their spelling. Then he tries out the more promising ways of teaching spelling, whatever they may be. Finally, he measures the spelling and pronunciation of his pupils to find out whether or not improvement in spelling led to improvements in pronunciation.

In India, and within the past few years, much interest has developed in action research as a promising approach to the improvement of school curricula and teaching methods. The following quotation is from Action Research Workshop (Second Report)*:

"The report of the first Action Research Workshop (1957) evoked much interest in educational circles. It captured the imagination of several Coordinators of Extension Departments and others. Meston Training College, St. Christopher's Training College, Madras and the Training College in Ferozepore have conducted similar workshops."

---

* *Action Research Workshop* (Second Report), Extension Services Department, Sri Ramakrishna Mission Vidyalaya Teachers College, Coimbatore District, 1960, p. 3.

Two days were devoted to Action Research at the All India Seminar for Coordinators of Training College Extension Departments held in March 1960 at the Central Institute of Education in Delhi. The view was expressed that encouraging and providing consultative services to groups of teachers who were actually trying out more promising ideas in their classrooms was an excellent method of improving schools.

For schools to get better, teachers must change. Back of all significant curricular improvements have been improvements in school people, their attitudes, understandings, and skills. There is, of course, no quick and easy formula that will cause school teachers and administrators to change fast. There is no royal road to learning. But bearing this caution in mind, the improvements that must be brought about in Indian schools, if they are to support and facilitate the emerging industrialized Indian culture, will probably come faster and be more solid if support is given teachers to experiment, thoughtfully and carefully, with their own promising ideas. Action research is the application of scientific method to the improvement of teaching at the grassroots level.

BIBLIOGRAPHY

Action Research Workshop (A report) Extension Services Department, Sri Ramakrishna Mission Vidyalaya, Teachers College, Coimbatore, India, 1958, and 1960.

Corey, Stephen M., *Action Research To Improve School Practices.* Bureau of Publications, Teachers College, Columbia University, New York City, 1953, 161 pp.

Curriculum Research Association for Supervision and Curriculum Development Yearbook. National Education Association, Washington, D.C. 1958, 420 pp.

Parsow A. Harry, and Miles, M. B. and Corey, S. M., *Training Curriculum Leaders For Cooperative Research.* Bureau of Publications, Teachers College, Columbia University, New York City, 1955, 158 pp.

BASIC EDUCATION

by M. Sykes

MARJORIE SYKES, *the author of this paper, is a well known name in Basic Education. She is closely associated with the training and retraining of teachers for Basic Education work for the past several years. For the last four decades and more, she has been in India working in different fields of education. After being associated for about ten years with secondary schools for girls and the training of graduate women teachers in Madras, she spent many years in the Shantiniketan School and the village education programmes of Sriniketan. In 1942, she accepted a temporary appointment as Professor of English in the Women's Christian College, University of Madras, returning to Shantiniketan to Andrew Memorial Fellowship, where she was mainly occupied with a full biography of Deshbandhu C. F. Andrews. Since 1948 she has been engaged in the training of Basic Education teachers at Sevagram.*

In this paper, Miss Sykes clarifies the basic ideas involved in the concept of Basic Education in the context of the close relationship which education bears to society. Basic Education is not a new *method of teaching the* old *content; it is* Nai Talim *which seeks to bring about a silent social revolution. The author observes: "Basic Education makes no sense, ultimately, unless the new social order for which Gandhiji lived and died is understood, accepted and striven for." The new social order of which Basic Education is an instrument and expression would be based on small integrated units of society, working on the basis of co-operation and recognition of personal responsibilities by members for the common welfare and which would be devoid of any hierarchy, social or economic. The function of Basic Education, the author explains is to enable the pupil to 'breathe the amosphere of his new society, to practise its life of shared responsibility and to enter into its intellectual and cultural inheritance'.*

Two very vital requisites of Basic Education are that it should be universal and it should use the mother tongue. The author very pointedly shows how the full implications of these two important criteria are not being properly grasped at present. Universal education, in its truest sense, is not merely bringing all children to school—it means universal caring, *it is not complete with the continuation of our present stratified class-system. And mother tongue does not* merely *mean teaching through the child's own language. Mother tongue is a positive force for preserving and enriching the deep cultural traditions which would sustain the new social order.*

The article is a welcome addition to the growing literature on Basic Education.

AT the college where the writer studied for the Teachers' Diploma, our lecturer in psychology used to begin the course by repeating the saying that if you want to teach John Latin, it is not enough to know Latin, you must also know John. By the time we had entered the Teachers' College, it was assumed that we *did* know Latin—or mathematics, geography and the rest—sufficient for our purpose; the classes in psychology were intended to help us to understand the "Johns" who were to be our pupils in school. *Why*, if at all, we should teach John Latin, and what else we should teach him in addition to Latin—these were topics for consideration in other classes. On the whole, however, the tendency was to take the *content* of education very much for granted; we concentrated on the study of John's natural gifts and tendencies, and on how the understanding of these could help us to improve our *method* of education, and ensure that John learned his Latin well.

Now a lot of our "modern methods" of education are essentially improved teaching techniques. They represent a healthy rebellion against the "sit still and learn by heart" tradition which ignored the demands of the child's nature for activity and for meaning. Wherever such enlightened methods are adopted, school becomes for many children a pleasanter and happier place. We ought to rejoice in anything that makes school less of a jail, for the happiness of childhood is a priceless treasure.

Where does Basic Education come into this picture? Before we can tackle that question we must recognize that for any real understanding of what education is, we must consider its content as well as its method. It is not enough to know Latin and to know John; we must also know *why* we teach John Latin; and in approaching that subject we shall have to consider the whole relationship of education to society. Obviously that cannot be done in any proper manner in a few sentences; whole books can be and have been written on the subject. But in order to set Basic Education in its proper perspective it is necessary to attempt a brief outline.

Education is apprenticeship, and its discipline is designed to fit the young human being for his place in adult society. Over very large areas of the world and very large stretches of history, formal education has been apprenticeship in the narrower sense of the term. The young were set to learn the craft or skill which society desired them to pursue; they learned, and still learn it, by practical experience. In the occupational hierarchy some of the "Johns" learned Latin (or Sanskrit) because their social destiny was to be teachers or priests. In the West, Latin is still, in general, reserved for those who are designed to enter the "learned professions", who fulfil, that is, the social function of the Brahmin.

Now it should be said in passing that our schools of today are, historically, the heirs of the Brahmin's special kind of apprenticeship. The farmers, the weavers, the carpenters, the merchants, learned their trade in the fields and in the shops. Normally it was only those whose apprenticeship was to the sacred books who were assembled and taught their letters, and it was these specialised schools that suffered from the temptation to exalt book-learning for its own sake. There has never been any need to preach to the carpenter and his apprentice the virtues of "learning by doing"; the boys in his shop might not always find there much intellectual stimulus, but many of them could and did find deep aesthetic and emotional satisfaction in their work.

But formal education was never, and is not now, the most important part of a child's apprenticeship to life. His experiences in formal education are preceded, surrounded, and interpenetrated by the ceaseless pressure of society itself, with its standards of value, and its conception of the nature of the world and the significance of human life. A part of this informal social education is made explicit in the religious and cultural traditions of society, and it is the function of the "Brahmin" to embody it; much more of it is implicit in a multitude of unspoken assumptions which the growing child absorbs with the very air he breathes.

Now Basic Education is usually understood to be one of the modern techniques which aim at improving the quality of education by applying the method of "learning by doing." The special feature of Basic Education is held to be that it does this by making one of the productive crafts the centre of education, and that it endeavours to combine the best features of the "Brahminical" and "apprenticeship" traditions by drawing out of the craft its possibilities of *intellectual* stimulus equally with its creative and emotional satisfactions. It is recalled that Gandhi insisted that the craft must not be taught mechanically, but scientifically, with an understanding of the why and wherefore of every process; and that he believed that "the highest development of the mind and spirit" can be attained by such craft-centred education.

All this, of course, is perfectly true. But it needs to be stated with all possible emphasis that Basic Education is not *merely* a technique; it is not merely a new trick for teaching the old contents, on a level with other new tricks for the same purpose. When Gandhi talked about "the highest development of the mind and spirit" he was most emphatically *not* thinking about the highest university degrees. It is true that he did once—in an effort to explain his principles in language commonly understood—characterise the goal of an eight-year Basic School course as comparable to "matriculation without English". But it is quite irrelevant to the real point at issue to argue about whether it is or is not possible during the time available to "cover" all the present matriculation syllabus "in correlation with craft". Gandhi would not have regarded his educational ideas as his "best gift" to India if they had been nothing but a method of ensuring efficient, "good" education with the old assumptions and the old intellectual and social content. Basic Education, in his conception, is not necessarily "good" education; it is *new* education, *Nai* Talim. It is the instrument and expression of a *new* social order. Basic Education makes no sense, ultimately, unless the new social order for which Gandhi lived and died is understood, accepted and striven for. New things, like old things, may be either good or bad; the *quality* of the new education, like the quality of the old, will depend on whether the teacher knows and loves both "John" (his pupils) and "Latin" (his craft and its scientific basis). The more of such teachers there are, the happier and more efficient the new education will be. But its efficiency must be measured by its own *new* terms of reference, not by the old ones. And these new terms of reference have to do with the fundamental question: *what* do we teach John, and *why*?

Now, except in a few very homogeneous and usually isolated societies, the world's education has been geared to a social order of "higher" and "lower" strata. Various economic and social functions (as in the Indian caste system, but not only there) are correlated to various levels of economic and social privilege. In

India, a new kind of stratified society has been superimposed upon the old. The effect of the British system of education has been to create a new intelligentsia which fulfils many of the social functions of the "Brahmin" and the "Kshatriya"; the great incentive for entry into the educational system is that it offers a chance of entry, not by right of birth but by a certain kind of personal merit, into the ranks of these privileged classes.

The old societies, in India and elsewhere, preached that each man had, according to birth, rights and duties in a divinely appointed order. The new stratified society preaches the right of the individual in a competitive secular order to win what place he can for himself in the hierarchy of class; the school and college certificate is his weapon in the struggle. The sanctions of duty have largely disappeared, but the class stratification of society remains, and the pattern of education, both formal and informal, reflects it.

In contrast to this, Basic or New Education (Nai Talim as Gandhi conceived it) reflects what Gandhi called "the India of my dreams", that is to say the freedom and self-government of the new order which he worked to establish. The basic units of this order are integrated human communities, of a size small enough to make possible direct personal intercourse between their members, and the sharing of direct personal responsibility for the common welfare. Within such communities there is variety of function; there are men and women with differing gifts and skills, who make their contribution to the whole in specialised ways, as in the old village structure of India in its period of vigorous health. *But*—and this is the crux of the new order of Gandhi—variety of function does not imply any hierarchy of privilege; the village shoe-maker and scavenger deserve essentially the same social honour and the same economic reward for their contribution to the well-being of the community as do the teacher and the tiller of the soil.

The purpose of Nai Talim is to enable children to breathe the atmosphere of this new society, to practise its life of shared responsibility, and to enter into its intellecual and cultural inheritance

How then is it possible that Nai Talim should be practised by those who do not accept in their own lives the social principles of the new order? The structure of our present national education, like the rest of the official "services", is hierarchical through and through; class divisions exist between teacher and teacher. We do not even accept, as a nation, the principle that the teacher of the little children in a village school deserves at least the same social and economic recognition as the man who does the much easier work of directing advanced university students. Still less do we accept the intrinsic value of so-called 'menial' service; we employ some one other than the teachers and pupils to keep the school premises clean, and pay him less than the humblest teacher. Is it to be wondered that when "Basic Education" is taken out of its natural setting in Gandhi's thought, and grafted on to such a structure, it withers and dies? It appears that the attempt is made because, as was said above, even our educationists think of Basic Education as a new *method* of teaching the old *content*, and do not understand that it means the preparation of children, by apprenticeship, for life in a profoundly revolutionised social order.

For Nai Talim, the method of education through useful work is only valid if it is the fruit of the conviction that creative physical work is not only a means to an end, but also an intrinsic and permanent value of human life, one of the basic conditions of our right relationship, as living creatures, to the living universe of which we are a part. If we do not believe this, if in our heart of hearts we regard bodily labour as "drudgery", and equate progress in civilisation with escape from it, work will not long survive as a mere technique of education.

Moreover, there are two other criteria of Basic Education, which take precedence even of its craft-centred method in the formula which Gandhi himself laid before the Congress in 1938, but to which scant attention is now paid. The first is that this education should be *universal*, the second is that it should use the mother tongue. One suspects that these points are little discussed because it is assumed that they are accepted by all; it is doubtful however whether their revolutionary implications are fully understood.

For a truly universal education is one that holds all children in equal honour; it does not mean merely that they all attend some kind of school so that they may indulge in the present scramble for the limelight in which the weaker lose. Universal education means universal *caring;* it is not compatible with the continuation of our stratified class-system. That is the negative condition for the organic unity of society: do not divide. Education in the mother-tongue is the positive condition, for the mother-tongue is the repository of those deep cultural traditions on whose life and vigour the building of a stable and unifying social *dharma* depends. Every society needs roots; the India of Gandhi's dreams has to be rooted in the best life of the India of the past; it must come, when it comes, "not to destroy, but to fulfil".

"When it comes"? Vinoba's *gram-dan* movement has begun to awaken in men and women the desire to live in just such united family communities as Gandhi envisaged in his dreams. Nai Talim, his "best gift", will find its true work in the building up of this great *new* order, not in doubtful compromise with the old. "No man puts a new patch on an old garment."

EDUCATION OF NURSERY SCHOOL TEACHERS

by Russell C. Smart

DR. RUSSEL C. SMART, *the author of* Education of Nursery School Teachers *worked in the Psychology Department of Merrill-Palmer School, Detroit, Michigan from 1937-1944. Later he joined the Department of Child Development and Family Relationships of the Cornell University where he worked till 1953 after which period he has been working in the same department of the University of Rhode Island as its head. During 1959-60 Dr. Smart visited India as a Fulbright Lecturer and was attached to the Faculty of Home Science of the Maharaja Sayajirao University of Baroda. Dr. Smart along with his wife, Mollie S. Smart is the author of four important books in his field of specialisation viz.* It is a Wise Parent (*Scribner's, 1944*); Living and Learning with Children (*Houghton Mifflin, 1949 and 1956*); An Introduction to Family Relationships (*Saunders, 1953*) *and* Living in Families (*Houghton Mifflin, 1958*).

Dr. Smart here discusses first the purpose and programme of nursery education to enable the readers to appreciate clearly his analysis of the education of nursery school teachers which forms the latter half of his chapter. The main objective of a nursery school is to help each child to optimum development, to provide an environment in which each child can realise to the fullest extent his potentialities at his present stage of growth and lay a foundation for the healthy unfolding of his personality. The author describes how the different items in the programme of the school like provision for motor activities, art, music, language and numbers help towards the realisation of the above objectives.

The objectives of the curriculum for the nursery school teacher have to be derived from the purpose and programme of nursery schools and these objectives can be thought of in terms of (1) knowledge and understanding, (2) skills and abilities and (3) attitudes and appreciations. A clear idea of the developmental processes by which children change from conception to at least puberty, a broad knowledge of science, art and literature and an understanding of the personality and culture will meet the requirements of the first objective while for the second the most important requisite is skill in the observation of behaviour of children. The ideal nursery school teacher should also be skilled in at least one area of science, art or literature. The attitudes and appreciations which form the third aspect may not be directly teachable, but are rather the products of the whole course of instruction. The teacher should have a warmth towards others, a real liking for people, young and old. Such an attitude towards *others stems from the self-insight and self-acceptance of a mature person.*

ALMOST forty years ago the first nursery schools were opened in the United States. There are now nursery schools in countries all over the world. Even so, there is a great deal of misunderstanding about what goes on in nursery schools. Only when the program and purpose of nursery education is understood can we examine the education of nursery school teachers.

Some people look on nursery schools as places where children are given custodial care; the purpose, according to this group is to see that no harm comes to the children while they are happily occupied. At the other extreme, some people think of a nursery school as a place where children get a head start on primary school subjects; the purpose here is thought of as teaching reading, writing and arithmetic. If the first purpose as stated here were valid, there would be very little that would need to be included in the education of nursery school teachers. If the second purpose were true, the education of nursery school teachers would be identical with that of primary school teachers.

The main objective of a nursery school is to help each child to optimum development, to provide an environment in which each child can realize to the fullest extent his potentialities at his present stage of growth and lay a foundation for the healthy unfolding of his personality. This objective stems from two sources, one philosophical and one scientific.

The philosophical source is the belief that each individual is uniquely important in his own right because of his existence. His status in *society, past, present, or future, is of less* importance in determining his value than the fact that he *is*. Nursery schools, whose greatest development has been in the United States, have taken this idea from the American cultural pattern. Central to the ethos of the American culture is this belief in the importance of the individual.[1] A nursery school as a place where children's growth is nurtured but not forced, guided but not molded, fits into a culture with such an ethos. It would be less consonant with a culture which looks on children as links in a family of generations, or as merely economic units, or as miniature adults.

---

[1] Sirjamaki, J. *Culture Configurations in the American Family.* (In) Landis, J. T. and Landis, M. G. *Readings in Marriage and the Family.* Englewood Cliffs, N. J. Prentice Hall, 1952. pp. 9-17.

The scientific source of the nursery school's objective lies within the field of Child Development, particularly that part of it which deals with the growth and development of children up to the age of five. If adult structure and adult functioning are looked on as the goal or end-result of the process by which each individual realizes his potentialities, children in nursery school are seen to be beyond the first stages of development (embryonic development), beyond the stage of developing the capacities for extra-uterine existence (infant development), and in the early phase of developing the abilities necessary for functioning as an individual in small secondary groups. Physiological functions of the organism are operating approximately at their adult level. Perceptual abilities are fairly well established but still developing, as are gross motor abilities. Fine motor abilities and conceptual abilities exist and are growing rapidly. Emotional and social behavior are still at a fairly primitive level.

The science of Child Development also shows that when growth and development are most rapid, they are most plastic. They can be influenced most easily to take one form or another when the natural inclination is for change to be taking place. When growth is slow, as in adulthood, it is much more difficult to bring about change, particularly an increase in size or complexity of any phase of the organism.

Besides describing the course of development of the average child, the science of Child Development is also concerned with the range and extent of individual differences in developmental status and progress. For many reasons, one child may differ from the average child in the development of one or more structures or functions. Thus one child in a group of nursery school children may be advanced beyond the average of the group in one area, be retarded in another and approximately at average in the others; other children will also vary from the group average, but each with a different pattern of development.

—Elizabeth Doak elaborates on this point of view in *What Does the Nursery School Teacher Teach?*[2] The fostering and guidance of growth is the principle function of the nursery school. Of especial importance, because of the stage of growth of nursery school children, is growth in understanding of feelings and social relationships. To some extent the nursery school teacher works directly on the guidance of this understanding, but probably more importantly, she[1] sees all the activities in which she engages as means to the same end. For instance, a good nursery school provides junglegyms, slides, tricycles and wagons. Obviously, this will have an effect on the children's motor development. But the nursery school teacher is alert to the fact that while engaging in motor activities, the children are also experiencing feelings, and are learning ways of getting along with their peers. She is constantly aware of the relationships that exist between the children during their play, and helps them to interpret the feelings which exist as the play develops.

---

[2] Doak, Elizabeth, *What Does the Nursery School Teacher Teach*? Kingston, Rhode Island, National Association for Nursery Education, 1952

Similarly a nursery school provides for experiences in art and music.[2] Here the emphasis is not on the product—the picture, or musical performance, or object made of clay. The emphasis is on the process by which the child achieves the product. Although part of the process is motor and manipulative, feelings are also involved. The nursery school teacher looks for clues to the feelings that the children are experiencing. She helps the children to recognize some of those feelings. The techniques of art are not the important goal, but exploration of materials and methods is allowed and encouraged. The nursery school teacher has, herself, experimented with art techniques, not to make her an artist, but to be aware of the experimentation process.

A nursery school has a nature and science program,[3] using the physical environment in which the school is placed as the starting point. The goal here is to help the children build an understanding of the environment which is compatible with their developing ability to form concepts. Perhaps more basically, the teacher fosters and encourages the children's curiosity about what happens in the world about them and about why events take place as they do. The teacher is aware of the changes in animal and plant life that take place with the passing seasons. Sometimes she brings examples into the school; sometimes she takes the children on a field trip where they see and ask questions about plants and animals. Even in cities, quite apart from zoos, there are abundant possible experiences wih zoology and botany. John Kieran once wrote a book about the wild life he had observed in New York City which amazed many citizens of New York who had never had the curiosity or keenness of observation to realize that nature was observable, even surrounded by concrete, stone and asphalt.

---

[1] Throughout this paper I will use the pronoun "she" to denote the nursery school teacher. Women make up almost 100% of nursery school teachers. But there is a sufficient number of successful men teachers of nursery schools in the United States to point out that women do not have exclusive right to the field of nursery education.

[2] Jones B., *What is Music for Young Children?* Kingston, R. I., National Association for Nursery Education, 1958.

[3] Haupt. D. *Science Experiences in the Nursery School*, Kingston, R. I, National Association for Nursery Education, 1959.

A nursery school also has a conscious program in language and numbers, but it is *not* a program of reading, writing and arithmetic.[4] The difference is clear when parents and teachers thoroughly understand the processes by which children develop the ability to perform the complex psychological processes which become integrated in reading, writing and arithmetic. Reading is the process of perceiving written or printed characters which are symbols of concepts or percepts which have been developed previously in the child's experience. Writing is the process of making the symbolic characters. Arithmetic uses not only symbolic characters, but also concepts of cardinal numbers and concepts of "more, less," etc.

My experiences in learning Hindi have reinforced my understanding of the psychological processes that together make up reading. I am injecting this personal note because it explains the function of the nursery school in promoting growth which leads to reading without necessarily teaching reading itself. In learning Hindi I first had to be aware of the differences between the characters in the Devanagiri script. First I had to be able to see the differences between the characters, for instance, म and भ . This process took me a long time because I could find no cues from my knowledge of the English alphabet. At the same time I was struggling with the differences in pronunciation of त्र त and प फ. I am still only very occasionally able to hear any differences in sound when I hear them spoken. Probably because of this lack of auditory perceptual acuity I find it impossible to speak them as different sounds. Vocabulary, once the visual and auditory perceptions were developed, has been relatively easy, since it has been a process of substituting Hindi words for English words as symbols of familiar concepts like *go, come, fruit, chair,* and so on.

---

[4] Leavitt, J., *Nursery Kindergarten Education*, New York, McGraw-Hill, 1958.

The nursery school's function is not to teach reading but to foster the growth of the percepts and concepts which form the basis of reading and the other school subjects. Discrimination of differences in sensory experience, as between forms, shapes, sounds, colors, temperatures, is helped by nursery school activities. Through group discussion, stories, the conversations the teacher initiates and carries on, children learn concepts and the spoken words which symbolize them. The richer the store of concepts and the larger the oral vocabulary that children have, the more readily do they find the identification of the written word when they enter school.

The real meaning of a "reading readiness program" lies in the stimulation of the growth of percepts and concepts. Some schools in the United States, and I suspect some in India, interpret a "reading readiness program" to mean the teaching of reading. Because of individual differences in the development of the necessary concepts, some children will be able to handle this part of the reading process by the time they are five. A very few are able to do it by four and a half. Such children as these who mature early will learn to read without coaching and the forcing of development. They will learn spontaneously as a result of their response to the language symbols in their environment. Other children who are maturing at the average rate may respond to the forcing of their development, just as an engine will respond to a forced draft, but there is ample proof in the American Child Development literature that no permanent advantage results from the forcing of development. Indeed some permanent damage often results, principally in terms of poor reading habits and feelings of inadequacy.

The relationship between the nursery school and the children's homes is an important determiner of the nursery school's program.[6] A nursery school, no matter how excellent, is not a substitute for a home. It is, rather, a supplement to each home from which the children come, an extension of the home as the primary influence on the children's development. The nursery school teacher's responsibility is to attempt to understand each home as it influences the child's behavior, not to sit in judgment on it. Understanding does not imply a laissez-faire acceptance of everything that each of the homes stands for, a care-nothing, do-nothing attitude toward influences within the home which are hindering the children's optimum development. A well-trained nursery school teacher tries to open doors of insight and learning through which parents can pass to more satisfying ways of meeting family needs. The nursery school teacher realizes that there are many acceptable and satisfying patterns of family living. Therefore she does not attempt to change all families into the same patterns of behavior. Just as she accepts each child under her care as being an individual at his own stage of development, so she accepts each family as it is, but with a potential for change and progress if she can find the key to helping them want to change.

---

[6] Beyer, E. Sharing, *A New Level in Teacher-parent Relationships*. Kingston, R. I., National Association for Nursery Education, 1957.

This, then, is the kind of program for which a nursery school teacher in training is preparing herself. It starts with children as members of families at their present stage of maturity and helps them to advance in their progress towards understanding themselves and their environment. In the course of her education, a nursery school teacher should spend a considerable number of hours working in a nursery school under the supervision of instructors who are skilled not only in working with preschool children but also in helping students to develop their potentialities as teachers of the very young. There are many advantages to alternating practical work in the nursery school with theoretical courses. From the point of view of administration, it is helpful if there are in the school at any one time, students at varying stages of preparation so that there is flexibility in assigning responsibilities in the program. There is the advantage to the students of being able to alternate periods of working with children and studying about their development and the influences on it.

Rather than outline or describe specific courses to be undertaken by young people in preparation for work as nursery school teachers, I will describe the objectives to be met in the entire curriculum. Various educational institutions will be able to meet these objectives in differing ways. I will state the objectives in terms of knowledge and understanding, skills and abilities, and attitudes and appreciations.

First there are objectives in terms of knowledge and understanding which students are expected to acquire. Since the nursery school teacher must be able to appraise her children's developmental status and help them to proceed in their development, she must understand the processes by which children change from conception at least to puberty. In the process of coming to understand these processes, she will also learn the signs of behavior and appearance which denote levels of development. Knowledge of average development between the years of three and five is insufficient for a nursery school teacher because of the variation which exists among children. It is necessary to know about the development of the average child before three and after five in order to understand those children whose development is retarded or advanced. Development from conception to the end of the first year of postnatal life should be studied because there occur within this period of time the clearest examples of the general principles of development. Development beyond the age of five should be understood not only because individual children will show advanced development, but also because knowing where children are headed will help the teacher in guiding them during the preschool years.

Nursery school teachers also need to have a broad knowledge of science, art and literature. They do not need to be specialists in all of these. The expectation is not that they be present-day DaVincis, able to make outstanding contributions in all these fields, but that they introduce them to their pupils. Because they will stimulate the curiosity of their pupils in these areas, they can expect to have questions asked of them which they cannot answer. Part of their understanding of science, art and literature must therefore be a knowledge of sources of information and how to use them in order to find the information they need.

Not only must nursery school teachers understand physical and psychological development of children. They must also understand personality dynamics and the relation between personality and culture. This necessitates a knowledge of conscious and unconscious psychological processes and their interaction with each other. Teachers also need enough knowledge of anthropology to recognize that there exist many different solutions to the problems of human group living. From this follows the realization that although an individual may make value judgments concerning the goodness of behavior of one kind or another, a professionally oriented teacher judges behavior not in terms of his familiarity with it, but in terms of how it achieves the meeting of human needs.

Of the skills and abilities which are the objectives of the education of nursery school teachers, skill in the observation of behavior is the most important. James Hymes has written about "the language of behavior." Because of preschool children's immaturity in the use of verbal language, a nursery school teacher perceives from children's behavior the source and depth of their feelings and also their interpretation of their relationships with people and things. Behavior also indicates the level of development of their motor and mental abilities as well as temporary fluctuations in health.

The nursery school teacher is aware of individual children as members of a group and the group as made up of individuals. I have seen nursery school teachers in training who could plan for and work with a group of youngsters without being aware of them as individuals who differed from each other. I have also seen students who were perceptive of the individual child and his feelings, but were at a loss in guiding a group. Both skills need to be developed.

Although I have written above that nursery school teachers did not need to be skilled in all areas of science, art and literature, ideally each teacher has developed skill in one area. I am thinking of one young teacher who had specialized in nature study, along with her work in early childhood education. During the time she was with the nursery school, the children drank in knowledge of plant and animal life. I am also thinking of a teacher who was extremely sensitive to pictorial beauty. Her arrangements of her own clothing, of play materials, leaves, flowers and branches were works of art to which the children reacted. I can imagine a nursery school teacher so familiar with literature that she could respond to a situation as it arose with an apt and beautiful phrase; such a teacher would also be especially sensitive to the poetry that children often compose spontaneously.

A skill highly desirable in nursery school teachers may be a characteristic of personality which cannot be imparted, but can only be enhanced. I am referring to the ability to be in repose with a group of children but alert to everything that is going on. Children often learn best as they work through for themselves the situations in which they find themselves. They need guidance always, but not necessarily direction. Nursery school teachers need the ability to time their interaction with the children and pace their guidance in tune with the children's developing abilities.

The attitudes and appreciations which are the objectives of the education of nursery school teachers may also be not directly teachable, but rather the products of the whole course of instruction, especially the training by the supervisors of student teaching in the nursery school. Each teacher should have as part of the fibre of her being an appreciation of each child as similar to others, but also unique. She must be able to accept other people as they are, without antagonism or the wish to make them over. She must have warmth toward others, a real liking for people, young and older. She should have the same warm acceptance of the parents of her children that she has for the youngsters. All of these attitudes toward others stem from the self-insight and self-acceptance of a mature person. Therefore throughout her education a nursery school teacher should be given the opportunity to grow in self-understanding. Some of this self-understanding will come through studying theoretical material, but a great deal of it comes through the conferences with the teacher-trainer during the practical work with individuals and groups of preschool age.[7]

It is probably obvious to the reader that I have had in mind throughout this description, a three or four-year university course. The level of understanding of sciences and arts, as well as of professional courses cannot be achieved at less than the university level. There is a place in the field of nursery education for nursery school aides, or assistants, who can be trained at the secondary school level, or during a year at the intermediate level. But individuals with such training cannot be given responsibility for the guidance of a group of preschool children and the work with parents which are essential parts of nursery school education.

---

[7] Read, K., *The Nursery School*. Second edition. Philadelphia, Saunders, 1955.

RADIO IN SECONDARY EDUCATION

by C. L. Kapur

PROFESSOR C. L. KAPUR, *the author of this paper, is the Chief Producer of Educational Programmes in the All India Radio. He has a distinguished record of work in education as a teacher and an administrator. He joined the Punjab Educational Services in 1923 and worked till 1947 as a lecturer and professor in colleges in the Punjab. Between 1949 and 1951 he was the Principal of the Government Training College for Teachers at Jullunder and the Dean of the Faculty of Education in the Punjab University. In 1951, he was elevated to the post of the Director of Public Instruction and Education Secretary to the Punjab Government which he filled with distinction. After his retirement from the Punjab Educational Services in 1955, he was appointed in 1956 as the Chief Producer of Educational Programmes of the All India Radio in which capacity he is at present working.*

Professor Kapur discusses here the place of radio in secondary education in the context of the changing pattern of education and the rich potentialities of the spoken word as a medium and tool of education. Citing some of the most significant achievements of radio, he elaborates his thesis that radio can be the teacher's very effective ally.

Professor Kapur has also tried here to meet with some of the present criticisms directed against the efficacy of school broadcasts. He puts forth a plea that skill in scripting and studio techniques of production overcome to a great extent some of the apparent handicaps from which the present school broadcasts are supposed to suffer.

His complaint that practising teachers in our country have not cared to understand the methodology of broadcasts to schools is amply true. His indirect reference to the role that a training college can play in properly orienting the teachers in training deserves consideration of the administrators of teachers training programmes.

The paper abounds in sound educational maxims and thoughts. Of special interest is the author's elucidation of the expanding role of radio in breaking down the rigidity of divisions between subjects and different classes and in vitalizing the curriculum itself.

IN India, school broadcasting is still struggling to gain recognition in education. No doubt, some seventeen stations of the All India Radio are putting out broadcasts to schools and another six relay them, but speaking broadly, the tendency is to ignore them or to look upon them as a rather unwelcome incursion into the preserve of the teaching profession.

The changing pattern of education demands reorganisation of resources and revitalization of traditional methods. And, a good school broadcast can give the teacher, through its subject matter, the freshness of its presentation and the new techniques of studio production, an additional means of developing his own effort, and greater incentive to sustained thought about his craft.

RADIO AND TAPE-RECORDER

Radio and its complement, the tape-recorder, have made possible the recording and reproduction, as also, the storing and dissemination of sound and voice. Together, they offer immense scope for economy and effectiveness of teaching effort.

In a way, the radio marks the revival and refinement of the oral tradition and the rehabilitation of the spoken-word. The invention of writing had weakened the oral tradition. Writing became the chief channel of communication of worthwhile knowledge. It gained a new prestige. From speaking and hearing men, especially men who mattered, turned to writing and reading —the gateway of perception changed from the ear to the eye.

Writing has always been and will continue to rank as one of the major achievements of human skill and ingenuity. It helps us to preserve knowledge and store it. Books may, in fact, be likened to 'packaged knowledge' capable of being transported across time and space. Writing, was, for centuries, the only means of carrying thoughts and sentiments and experiences to others in other parts and other times. But, in writing the word undergoes a process of transformation. The written word loses the charm and the impress of personality. It lacks the vibrant breath of the spoken word. Sentiments get mummified. Speech gets petrified. Being primarily concerned with the spoken word, the radio breathes life into dead words and can be a source of inspiration to speakers. In a very significant manner, the radio speech combines the qualities both of speech and writing. Writing is seldom impromptu—on the other hand it is the result of deliberate effort. It is a finished product. It ensures accuracy of expression. The radio uses expressions and sentence-structures, which are more speakable and which are more easily comprehensible. Broadcasts, though often scripted beforehand, are not written merely to be read aloud, but to be spoken with all the simulation and verve of life. As speech is the chief stock-in-trade of the teacher, Radio can be his very effective ally.

Another achievement of the radio is that it expands vastly the scope of oral transmission without spreading it over time. Unaided human voice has a very limited range, while the range of the radio is unlimited, and reception at the other end almost instantaneous. Recording on tape and disc has, further, made it possible for the spoken word to be captured, preserved and repeated, when needed. It has also enabled us to listen to voices, which time may have silenced for ever. The future heritage of mankind will, among other things, contain a rich heritage of the speech and songs of those, whose voice we and posterity would love to listen to again and again. On the radio, the human voice rides at a terrific speed circling the earth seven times in a second.

PECULIARITIES OF THE MEDIUM

A broadcast brings to the listener a disembodied voice coming, as it were, from nowhere. The listener, no doubt, misses the physical presence of the speaker. But, voice has a way of conveying the impress of personality. The vivacity of the person or his seriousness is easily conveyed by the voice. Again, you merely hear; and there is nothing to occupy the eye. But, it may be remembered that each word conjures up in the mind of the listener a picture. And, then, there is such a thing as pictorial language. Human beings assimilate situations by imagination and the listener can be helped to paint on the canvas of his imagination rich pictures full of life and colour. Some of the works of great masters of fiction are not illustrated and yet they succeed in leaving in the mind of the reader rich and glowing pictures of situations described and persons portrayed. For instance, most of the editions of the works of Thomas Hardy are not illustrated, but all the same, he succeeds in peopling the mind of the reader with pictures of surpassing beauty, both of landscape and of social situations. Skill in scripting and thoughtful choice of words and phrases and imagery succeed in overcoming this apparent draw-back.

Another difficulty of the broadcaster is that Radio is a one-way communication. You cannot ask questions, which may arise in your mind as you listen. You cannot ordinarily speak back.

You have no means of having your doubts resolved. These difficulties are not, however, altogether insuperable. A practised broadcaster establishes an intimate personal contact with the listener. He feels the presence of an invisible audience. He anticipates their difficulties and asks and answers questions, which are likely to be asked by the listeners. Thus, skill in scripting and studio techniques of production mitigate, to a great extent, the difficulties occasioned by the inability of the listener to speak back. It may, however, be mentioned that speakback arrangements have been provided by the more progressive broadcasting organisations. Australia, for instance, has such an arrangement.

RADIO AS A TOOL OF EDUCATION

As a tool of education, radio has a potential, which has not yet been clearly apprehended or extensively exploited. Children in schools need to be informed faster and more fully than ever before. The traditional methods of teaching and learning are facing a strong challenge, and it is our good fortune that a new technological aid to education should come just when the time calls, as never before, for an accelerated tempo in classroom instruction. Unfortunately, practising teachers have not cared to understand the methodology of broadcasts to schools. Perhaps, they are not convinced of their value. Some States like Andhra Pradesh and Himachal Pradesh have provided a period in the class time-table for in-class listening to school broadcasts, but, by and large, schools do not pay any serious attention to programmes specially put out for in-school listening. It is indeed a pity that a compulsive order should have been necessary to enforce listening to broadcasts. Somehow, the attitude in our country is—things will be done only under a directive from authorities. Intrinsic value or educational significance of things does not, as a rule, evoke interest or gain attention. Perhaps, this indifference can be traced to the deficiencies of teacher training in our country. In syllabuses for teacher education degrees and diplomas, the radio method of communication finds very little space. It is, however, encouraging to know that Punjab and Rajasthan have, recently, included some topics on the radio method of communication in their syllabus of General Methods of Teaching.

AIMS OF SCHOOL BROADCASTS

School Broadcasts aim, or at any rate, should aim at two purposes: one immediate and the other ultimate. The immediate purpose should be to make learning an exciting experience and the ultimate purpose should be to discover the real purpose of education and, in some measure, fulfil it. Mere transfer of knowledge is not enough and perfunctory routine classroom instruction cannot hope to achieve that stimulation of intellect, that widening of the mental horizon. In the classroom, knowledge is generally given by the list; the text-books contain what may be called distilled knowledge. The social relevance of knowledge does not receive proper emphasis. The application of knowledge to everyday situations is not made sufficiently clear. To be worthwhile all instruction should, in the first place, give satisfying knowledge and in the second place, an appetite for more knowledge. It should also give ambition to the learner to make discoveries of his own and to know how discoveries were made so that he can contribute to the pushing out of the frontiers of knowledge. A good piece of communication properly planned and skilfully produced should start a chain reaction in the minds of those receiving the impact.

School broadcasts are not lessons of the air. They adopt a problem approach to the communication of knowledge. They are developed round an interest or a real life or a near life situation. They do not deal with knowledge theoretically or compartmentally. Ideally, radio programmes to schools should not be subject-centred. They should be life centred. Their purpose should be to promote in children and teachers alike deeper and wider understanding of themselves and their surroundings and to give them habits of observation. Broadcasts aim at presenting an integrated picture; and ideas contained in them often ramify into different fields of knowledge. Among other things, good educational programmes set up or at any rate should set up, standards of speech and performance for students and teachers alike.

SCHOOL BROADCASTS AND CURRICULA AND COURSES OF STUDY

Those interested in broadcasts to schools frequently ask themselves and others, 'Should broadcast to schools be tied up strictly with the school syllabuses and curricula and courses of study?'

The question is more easily asked than answered. A point that can help us reach some sort of satisfactory answer is that syllabuses are not an end but a means—means to enable the pupil to grow to the fullness of his stature by the exercise of his own unique faculties. Syllabuses are devised to offer disciplines, to give certain skills and help the pupil make and do certain things. They should also enable the young listeners to discover more about the world and themselves. And, that is precisely the purpose, which school broadcasts set before themselves. Whether they strictly follow the syllabus, topic by topic, or not, they are broadly conceived to promote like purposes and there should be no fear or suspicion of school broadcasts being yet another task added to the many tasks which the poor teacher is expected to perform, or of any conflict between the two. If not providing some new information, the broadcast presentation often rearranges the content of the curriculum in a new pattern—it takes cross sections and panoramic surveys of the subject to enable the listeners to see the march and sweep of events in clearer perspective. For instance, programmes on civics would give a clearer perception of the story of the 'rule of law' in different stages from the 'law of the jungle' to democracy, where men govern themselves through their chosen representatives and laws made by them. The story of 'lighting' will, similarly, comprehend all phases of the development of artificial lighting from torches to the flash and neon lights of today and the radioactive lamps of tomorrow. In fact, school broadcasts can, in the hands of a thoughtful teacher, become a labour-saving and time-saving device. Broadcasts to schools should bring infusions of new life into the curriculum itself and should help break down the compartmentalisation of knowledge that goes with subject syllabuses. The rigidity of division between subjects and different classes would also be mitigated. They further help correlate knowledge and skills to the immediate needs and the natural environment of the learner. Some subjects and some aspects of subjects lend themselves more easily to the radio medium. Subjects like General Science and Science in relation to social needs lend themselves admirably to the medium of broadcasting. Broadcasts on the history of social progress in consequence of technological advances will make the study of Physics and Chemistry, Botany and Zoology and social sciences more interesting and more meaningful. Scattered beads of facts and information are strung together as integrated knowledge having social relevance. But, broadcasting cannot take the place of work in the laboratory, or for that matter, of work in the library. These disciplines cannot be circumvented or short-circuited. Skill subjects are not, as a rule, radio-genic.

EDUCATIONAL ASSOCIATIONS AND THE PROFESSIONAL ADVANCEMENT OF TEACHERS

by William G. Carr

DR. WILLIAM CARR, *the author of* Educational Associations and the Professional Advancement of Teachers *is the Executive Secretary of the world's largest professional organisation, the National Education Association (NEA), the current membership of which totals approximately seven million teachers.*

Before he turned administrator, Dr. Carr taught in high schools, and different universities like Stanford, Michigan, California and Columbia. He joined the NEA head-quarters staff in 1929, coming directly from the California Teachers' Association where he was Director of Research. He also worked as Secretary of the Educational Policies Commission.

A firm believer in strengthening educational ties between teachers all over the world, Dr. Carr has been active for many years in the work of the World Confederation of Organisation of the Teaching Profession and serves as its Secretary-General.

Dr. Carr also served as Consultant to the U.S. delegation of the United Nations in San Francisco in 1945 and as Deputy Secretary to the UNESCO Conference in London in the same year. In 1953, he was a member of the American-Korean Mission to aid in rebuilding the educational system of Korea. He has also visited the Carribean, Central and South America and South-east Asia to inspect educational services of the ICA.

Dr. Carr is the author of numerous books and pamphlets. He was honoured with doctorates honoris causa by Universities of Miami, Columbia and Boston.

The present paper by this chief executive of the NEA embodies a crystal exposition of the general policies and principles that guide the Association and provides an excellent introduction to its expanding multifarious programmes and activities for advancing the professional skill and effectiveness of teachers indicating incidentally their bearing on the question of elevating their material and economic status. The Future Teachers Clubs maintained by the Association in high schools, the Student National Associations operated by it to supplement the regular professional studies of the teacher in making, the pioneering efforts that are being made by the NEA to raise the requirements for admission to the teaching professions, the extensive use made by it of pub-

lications to reach its individual members in the vast country to bring to them information regarding improved techniques and methods of classroom teaching, the thirty Departments in the NEA representing various disciplines and subjects and its Research Division—these are the activities which would and should interest Teacher Associations in any part of the world.

I PROPOSE in this paper to avoid the broad and general principles that should govern the organisation and working of educational associations of teachers and to offer instead a description of a concrete program that I know well,—the work of the National Education Association of the United States.

Let me first emphasize, however, that I offer these descriptive notes in no spirit of boastful pride. No one knows better than I do how many shortcomings our Association suffers and how much still remains to be done before we can claim to be a fully professional and fully effective national body of teachers. Yet, I do firmly believe that teachers and teachers' organizations can learn from one another. I have myself learned much from visits in other lands, and particularly from India during my short visit in 1956, as well as from conversations with the delegates from the All India Federation of Education Associations at various meetings of the World Confederation of Organizations of the Teaching Profession.

The National Education Association of the United States (NEA) is a professional organization of 700,000 members. These members voluntarily join the national organization because they wish to improve their status as teachers and to advance their skill in serving the American people. The Association includes teachers at all levels from kindergarten through the university.

It is possible to divide the NEA program into two large parts,—that which deals with the material and civic rights of teachers and that which deals with advancing the skill and effectiveness of teachers. Such a division, while convenient, overlooks one very important point. After all, in proportion as the skill of teachers increases, society will be justified in giving greater recognition to their material and economic status. Conversely, as the material rewards of teachers are elevated it will be possible to recruit into the profession a constantly higher quality of individuals with more extended professional training.

Thus, one might with good reason say that all of the work of the National Education Association in securing adequate local, state, and federal financial support for education, in promoting reasonable schedules of salary for teachers and school administrators, in seeking to bring about classes of a reasonable size, and a working day of reasonable length, is in all these things contributing to the competence of the teaching profession.

However, I propose in this short article to deal rather with those NEA activities which most obviously and directly, though not necessarily most importantly, contribute to the professional advancement of the members of the Association.

We begin with the youngsters in the secondary schools. The NEA maintains a system of Future Teachers Clubs in the high schools. These clubs are regarded as an exploratory activity to interest young people in teaching, to point out its advantages as a career, and to increase public understanding of the importance of education. By no means all the young people in the Future Teachers Clubs will become teachers. It is, in fact, undesirable that they all do so. Some may find, perhaps even because of the activities of their Future Teachers Clubs, that they are better suited for other occupations.

When the students reach the college and have selected teaching as a career, the Association operates for them a Student National Education Association. Here, as a supplement to their regular professional studies, young people are committed to teaching as a professional career. Here the importance of research, mutual cooperation, and high standards of ethical and professional performance are emphasized.

Ten years ago there were 515 Future Teachers Clubs with 10,000 members. Today there are nearly 5,000 clubs with 130,000 members. They are to be found in every part of the United States.

The student NEA program in the colleges which prepare teachers was not established until 1957. In the brief interval there have been established 745 chapters on various college campuses whilst the membership has grown to over 50,000 prospective teachers.

The Association has pioneered in the effort to raise requirements for admission to the teaching profession. Its current policies call for at least a bachelor's degree for all persons entering the field of elementary school teaching and at least a master's degree for those entering instruction in the secondary schools. Here, as elsewhere, the Association does not possess or seek authority. It has, however, met with considerable success by methods of publicity and persuasion in moving the profession toward these standards in every part of the United States.

The Association makes extensive use of publications to reach its individual members and to bring them information regarding principles and methods effective in good teaching. An important element in this program is the fact that the *Journal of the National Education Association* is sent every month to our 700,000 members. Every issue of the Journal carries material designed to advance the skill of the profession. In each issue some one topic is singled out for fairly extensive attention. The education of retarded children is an instance in point. Other topics that have been dealt with include: education in the arts, education of gifted children, scientific education, and a wide variety of other subjects.

Another important instrumentality of advancing the skill of its members is the device that we call departments. There are thirty departments in the National Education Association. A department consists of those members of the Association who are engaged in some particular type of work. Thus, there are departments for kindergarten teachers, for professors in the universities, for teachers of art, music, science, mathematics, and so on as well as departments for elementary school principals, secondary school principals, curriculum supervisors, and school administrators. Each of these departments is autonomous in its own field. All work together for common goals. It is the responsibility of each department to develop and prosecute programs which will help its members do more effective work in the particular area of service which these members have in common. Each department holds an annual meeting; many hold regional meetings in addition. Most of them publish special journals. These supplement the *Journal of the National Education Association* in the special field in which the teacher is interested. All together, approximately 25 different professional journals are issued each month from the headquarters of the National Education Association.

The Association is, in fact, an enormous publishing institution. Some of us think we publish too much. However, in a vast country such as the United States and such as India, it has appeared to us so far that the only effective and economical method of communication is by the printed word.

We supplement the printed word, however, in a variety of other ways. I have already mentioned the regional conferences of our departments. In addition, two or three times a year a regional conference on instruction is held. Here, all departments pool their efforts to supply an overview of instructional problems in a particular region. We avoid national instructional conferences in order to decrease the great costs of travel. We do try to include in each region teachers from widely varying conditions. Thus their varied experience may enrich the entire group.

Sound education, of course, should be based to the greatest extent possible upon the findings of educational research. For that reason the Association maintains a Research Division which constantly collects, files, summarizes, and evaluates the immense outpouring of studies in education. Many of these studies are of only minor importance. All of them added together, however, constitute an important resource for the improvement of the curriculum and of teaching methods.

One of the most useful NEA devices is the preparation of small pamphlets on selected basic problems of teaching. Let us take the teaching of reading as an illustration. The Association seeks out the best informed experts on the reading process. It brings these experts together with a representative group of practicing classroom teachers for a few days. Usually they select one of their number as the writer of the pamphlet which is to be prepared. Into this pamphlet is distilled the experience and research of the entire profession on the particular problem of reading. The pamphlet is then made widely available through libraries and direct sales to school systems, and to individual teachers. It is distributed and used at the various conferences to which I have already referred. In this way the most remote NEA member can keep in close touch with the best findings of educational research, —summarized in such a manner as to be most immediately useful in the practical problems of the busy classroom teacher. There are now about 15 of these pamphlets ranging all the way from such problems as the teaching of spelling, or the teaching of handwriting to the more complex questions of educational guidance and the assignment of homework.

From time to time the Association selects a problem upon which special attention is deemed necessary. It is now about halfway through a special three-year project on the education of gifted children. Into this project special resources are directed so as to improve the service of the schools to this particular group of students. Another recent project dealt with the prevention and treatment of juvenile delinquency in the schools. These are just two examples of a continuing process.

It should be understood that these NEA activities in no way interfere with the legal responsibility of school boards and other private and public agencies that control the schools. The Association does not possess the authority to make a single change in the methods of any teacher or in the curriculum pursued in any school. If this authority were offered to it, it would reject it. The Association has no authority other than that of a good idea persuasively presented.

The policies of the Association with respect to instruction (as with respect to all other matters) are reviewed annually by the Delegate Assembly of approximately 6,000 members. The Assembly meets for one week for this express purpose as well as to adopt the budget and elect the officers of the Association. Perhaps some overview of the current policies of the National Education Association may be gained from the following rapid summary of the resolutions adopted in 1959:

The Association believes that educational opportunity should be universally available to all American children and youth, without any discrimination as to race, sex, or religion. It believes that the public has a right and a responsibility to make a constructive and informed appraisal of the work that the schools are doing. It believes that teachers should be active and informed citizens in their own right. It believes that the profession should make prudent use of all of such media as television, radio, and motion pictures, as well as of the more traditional text books and other materials. It believes that schools and public agencies should cooperate in the development of sound character and law-abiding citizens. It advocates that schools teach the importance of world understanding and the study of international problems in order to find settlement through peaceful negotiation.—These are a few samples of the general policies that guide the Association as it works to elevate the status of education in our country.

EDUCATIONAL ASSOCIATIONS AND THE PROFESSIONAL ADVANCEMENT OF TEACHERS

by Sir Ronald Gould

SIR RONALD GOULD, *the author of this paper, is a distinguished figure in the National Union of Teachers in the United Kingdom, and has been actively associated with the movement in his country for the professional advancement of teachers for a period spread over more than three decades. He has been the General Secretary of the National Union of Teachers since 1947.*

As the General Secretary of the NUT, Sir Ronald holds membership of many important committees and councils in his country, such as the Executive Committee of the National Foundation for Educational Research in England and Wales, the Council for Education in World Citizenship, the National Advisory Council on the Training and Supply of Teachers and the Council of the United Nations Association.

Sir Ronald has made very significant contribution as the President of the World Confederation of Organisations of the Teaching Profession, over whose annual conferences he has been presiding since 1953.

In this paper, Sir Ronald deals with the four vital fields of activities of teachers' associations which he calls educational administration, teacher training, further education of teachers and refresher courses and public relations.

The author holds that teachers' associations should devote a great deal of time to the problems of educational administration and they should be in a position to advise the legislature on problems related to teachers and schools. He emphasises this advisory role to be played both at local and national levels. His suggestion that educational associations should endeavour to obtain control over the training of future members of the teaching profession is based on a sound maxim that 'the mark of a profession is its ability to control entry into its ranks'. His plea that the teachers' associations should play an increasingly important role in the inservice, further education of teachers would be fully endorsed by educationists all over the world. The author has done well to pinpoint the major deficiency of the present teachers' associations in most parts of the world—the lack of interest and initiative taken by them to keep the general public informed of their work and achievements, of educational problems and developments and enlist its sympathy in their aims and for the teachers in whose cause they work.

THERE is, unfortunately, no concise history of the growth and development of teachers' organisations throughout the world, but if there were I think it would be found that most, if not all, had followed, or were following much the same pattern of growth, starting as "trade unions" designed to fight for material benefits and gradually becoming bodies concerned with many other aspects of their members' lives.

In a profession where there is such a diversity of tasks and people it is perhaps to be expected that, at first, there should be little unity except in the face of extreme need. So it was in this country, and so, as far as I can tell from conversations with colleagues from other countries, it has been everywhere else in the world.

When the National Union of Teachers was first founded in 1870 it was because a number of smaller teachers' associations were beginning to feel quite desperately the need for greater uniformity and for improvement in salaries and conditions of work. Since then (and this, I feel, is as it should be) the N.U.T. has broadened its aims and functions enormously, though still active and increasingly successful in negotiating material benefits for its members.

What are these aims which teachers have in common once their material needs have been dealt with? It seems to me that they relate to four main fields of activity, which it is the duty of the professional organisation to consider: educational administration, teacher training, further education and refresher courses for its members and the provision of information about the profession and its work to the general public.

Educational Administration: Teachers organisations can and should devote a great deal of time to the problems of educational administration and in this country, as well as in many others in Europe and North America, they do so very successfully. I should make it clear that I am not suggesting interference of any sort in the functions of the legitimate authorities and do not mean by influence the use of pressure only when situations arise which teachers do not find satisfactory. Prevention is always better than a cure, and we have found that gradually it is possible for an organisation such as ours to win the respect of governments and civil servants, to the extent that the N.U.T. is always invited either to be a member of, or to submit evidence to, all the government advisory committees concerned with the various aspects of educational administration.

So it is that in this country we are in a position to advise the legislature on the number of teachers needed, the type of equipment to be used in the schools, the form examinations ought to take, and many other related subjects. Naturally our advice is not always taken, and we are not always satisfied with the results produced by these committees, but when that is the case we can dispute their findings much more convincingly for having taken part in their deliberations than we could if we were complete outsiders.

This advisory role is, of course, just as important at local as national level and in our country the teachers play a very important part through the activities of their "Teachers Representatives" who serve on Local Authority Education Committees. These representatives, unlike the elected Councillors who form the majority of the Local Education Committee's membership, are generally elected by their teacher colleagues or appointed by the Local Teachers' Associations and then co-opted to serve on the Education Committee. They enter into the general work of the Committee and are especially helpful in acquainting the elected representatives with the views of the profession on matters likely to come before the Committee. At the same time, the Local Teachers' Associations preserve their freedom of action to make representations direct to the Education Authority whenever they consider this necessary.

Teacher Training: Control over the training of future members of the profession is probably the most important of the powers an educational association must try to obtain, particularly if you believe, as many people do, that the mark of a profession is its ability to control entry into its ranks. We have not got this ability and, as far as I know, no other teachers' organisation anywhere in the world has it either. Once again, we must work through the government and its advisors, but the extent to which one can be successful in this way is well illustrated by the fact that, mainly owing to the efforts of the N.U.T., teachers in England and Wales will be required to undergo three years' training instead of two from 1960 onwards. We hope to establish a First degree in education and we believe that in time, using the same methods, we shall succeed in this aim as we have in others.

Further Education and Refresher Courses: The provision of further education and refresher courses by a teachers' organisation for its members involves a good deal of time and work for very little apparent reward.

Our Ministry of Education, some of the Local Education Authorities and certain colleges and other educational institutions do, of course, organise a variety of courses for teachers, many of them of very high quality. Nevertheless, we feel, as a teachers' organisation, that we too have an important responsibility in this field. Such work not only improves the professional qualifications of our members but also illustrates the capacity of an over-all organisation to cater for the individual professional interests of its members.

In this connection a number of our Local Associations organise "Refresher Courses" of various kinds and every year two summer schools are organised by the Union nationally, one in Britain and one abroad where lectures and discussions are held on one particular aspect of education. Furthermore, many of our Associations hold meetings from time to time at which members of the profession discuss particular educational problems.

I know that my colleagues in other countries can give striking evidence of their efforts in this field. Perhaps I can quote one further example from our own experience and that is a series of what we call "sectional" meetings which my Union organise at the end of each year. Within our organisation we have a number of permanent committees dealing with the specialised problems relating to the different types of schools to which our members belong, and at these sectional meetings representatives from all over the country meet to discuss papers which have been prepared by the committees during the year and to plan future work. Thus each member of the Union not only has a voice in his own particular field but knows that with his colleagues, under the aegis of the Union, he can rely on his interests being voiced by one of the most expert bodies in the country.

Public Relations: A duty which is still not recognised by some members of the educational associations is that of informing the general public of the work and achievements of their association and enlisting their sympathy in its aims, and also of informing the public about the developments and problems of the educational system as a whole. The need for work in the latter field will depend on what the appropriate Government departments and local authorities are already doing, but in my experience, there are few countries in which the teachers' association can feel that these bodies are doing all that is needed to make the public better informed about the schools and the education service and thus stimulating them to be more determined to provide teachers with all that they need to do their work adequately. In any case, there are aspects of this work which can only be done by the teachers themselves, especially in local community relationships.

The need for public relations work is perhaps more apparent where public education is a thing of long standing because, ironically, public respect for the teaching profession seems to have a tendency to decrease as educational opportunities increase. Perhaps it is the inevitable result of familiarity breeding contempt, but it can be a very serious problem both to the individual teacher and to the profession as a whole and one which needs constant attention. It is, ultimately, the general public whose attitude determines teachers salaries and working conditions, and which can effect the general standards of teaching and educational attainment. It is therefore vital that those in a position to do so should continuously endeavour to create a public awareness of the importance of education and of those who are its propagators.

The N.U.T. has long realised the need for good public relations and is on excellent terms with those responsible for the mass communication of information and entertainment. The results of its unflagging work are often slow to become apparent, but over a period of time we can see the fruits of our endeavours and I think it would be true to say that we have contributed a great deal to the gradual awakening of the national conscience to the urgent needs of education in our country.

If I have seemed to devote this article to extolling the National Union of Teachers, it is not that I think we are perfect, but that I feel we have evolved and are evolving along the right lines for a professional organisation whose members are and always must be representative of all types of school and all categories of attainment.

We have shown that it is possible for one organisation to represent the interests of a very wide variety of people who nevertheless have certain fundamental aims and responsibilities in common. We have shown that there is no need for a multitude of small teachers' associations to work at cross-purposes and duplicate effort, but that they can be infinitely more successful when united and co-ordinated and yet no less able to deal with their own particular problems. And finally we have shown that with this unity of purpose it is possible for a professional organisation to grow in outlook and activity, so that from being a body which recognises only one common goal in the material needs of its members, it can become one through which they can influence the future growth of the profession and the place which education holds in the eyes of the nation.

International Relations: May I, in conclusion, say a word about the development of international relations? Most teachers' associations, at least in their earliest days, are chiefly preoccupied with their own internal problems and the need for educational developments in their own country. Inevitably, their hopes of educational advance will depend largely on what they are able to achieve by their own exertions and on the nature of their country's own resources. But their colleagues in other lands may be able to help materially or, at least, be able to give advice and moral support. The exchange of information can be especially helpful, for it does not take long in conversation with colleagues from other countries, to discover how many educational problems are common to all lands. Such exchanges should not be confined to the discussion of common problems. Ideas about curricula and the development of new educational techniques, for example, must be widely disseminated, for we teachers belong to a community of learning which knows no frontiers. We have much to gain from others and perhaps, in some small way, something to give.

It is natural, therefore, that we should have witnessed in recent years the development of the work of international teachers' organisations and that these bodies should have found support from old-established and newly-founded teachers' associations alike. The major body, the World Confederation of Organizations of the Teaching Profession (WCOTP), in particular, is doing fine work bringing together representatives of organisations in all parts of the world to discuss common problems and to ensure that the views of teachers are expressed at international level.

In addition to this work on a world-wide basis, hundreds of valuable contacts are made between teachers' organisations in individual countries. We in Britain value such contacts enormously and we hope our colleagues overseas feel the same way about them, for I am certain that the development of contacts with colleagues in other countries is, not only valuable in itself as a means of promoting greater international understanding, but can also help the cause of educational advance and the development of teachers' associations in one's own country.

THE SEVENTH ATTEMPT

by Michael West

MICHAEL WEST *is a revered name among teachers of English in India. He has made the problem of teaching English as a foreign language his life work. He has spent twenty of the best years of his life in India where he intensively experimented on the best and the quickest ways of learning English as a foreign language. Besides numerous textbooks for foreign learners of English, he has published* Bilingualism with Special Reference to Bengal, Language in Education, The New Method English Dictionary *and (with Dr. W. E. Wood)* An Explaining Dictionary of Scientific and Technical Words. *Dr. West devotes at present most of his time to writing.*

This paper presents both an account and results of the attempts made by the author, spread over several years, to improve the effectiveness of the oral method of teaching English by trying to spot and eliminate its major limitations. In the experiments that the author reports here, the teacher was given the role of a supervisor and the tester of learning rather than that of an active driller or imparter of knowledge and skill.

The critical evaluation by the author of each of his experiments presented here along with his deductions and suggestions is of great interest and significance for every teacher of English who teaches it as a foreign language. It has important implications for all language teachers as well.

THIS article tells of a series of attempts, extending over many years, to overcome certain difficulties in the oral method of teaching English, especially in countries outside Europe. It is a critical account, telling of defects as well as successes. It is published here in the hope that it may encourage others to pursue similar lines of enquiry.

The Difficulties of the Oral Method: These difficulties are: —

1. The burden of the work lies upon the teacher, and the method demands a teacher who knows English faultlessly and fluently. The teacher has to devise lessons for himself or follow the instructions of a large and complicated "Teacher's Book" and carry them in his head in the classroom. Such teachers are by no means universal.

2. It is not difficult merely to understand a language, but it is far more difficult to put it together and use it correctly, yet

most of the individual pupil's time in the Oral Method is spent in listening and only a very small fraction in speaking. The larger the class, the truer this is.

3. Apart from some writing, the pupil cannot readily go on with his learning outside the classroom. The Oral Method is a method for the teacher of *teaching* a language, rather than a method for the pupil of *learning* a language.

The fundamental idea of all these attempts (discussed below) was to have the teaching done by means of a book with the teacher acting rather as Class Master—as supervisor and tester of learning rather than as active driller or imparter of knowledge and skill. The teacher (or rather "Master") introduces a lesson, or section of it, and tests the learning of it; but the main part of the learning is done by the pupils practising individually or (as was later found to be better, where practicable) in pairs.

The First Attempt—An Oral Course based upon the Reading: In this first attempt the oral work was based upon matter which the pupils had already learnt to read: thus the vocabulary was already passively understood. The work consisted of exercises drilling each new item (structural or content) in the section of the reading-book. The section was then re-told with the help of Guide Words,[1] and then freely without help.

This scheme had the following defects: —

1. The reading tended to get so far ahead of the Active work that the link was not useful but rather a nuisance as the pupil had to have two different reading books in use—unless, of course, the reading was kept back.

2. The vocabulary was a Reading vocabulary and contained many items of little importance in an Active vocabulary.

3. Too much stress was laid on Content items and too little on Structure. (In fact, the system worked better than it ought to have, because Structural items are necessarily repeated in lesson after lesson and so are automatically drilled, whereas many Content items do not repeat outside the one lesson).

As a classroom technique, however, the system worked well and it was found by experiment that a good class-master could get over 40% Individual Pupil Talking-time in a lesson. (Individual Pupil Talking time=Total time minus Teacher Talking-time and Other Pupils' Talking-time). In the teacher-class system I.P.T.T. seldom exceeds 10% and is often considerably less.

---

[1] "Ulysses set out again with his companions and came to an island."
=U - - again - his c.s. and - - island.

The Second Attempt—A Course based on a Minimum Adequate Vocabulary: It was first necessary to construct a Minimum Adequate vocabulary for Speech and Writing. The rather complicated procedure whereby this vocabulary (of about 1,200 words) was selected is described in *On Learning to Speak a Foreign Language*, and notes on methods of vocabulary selection may be found in *General Service List of English Words* (Longmans, 1953). The subject is too large and technical for discussion here.[2]

The Problem of Form: One of the major problems of all writers of Oral courses is that of Form. One cannot arrange the matter as in a grammar:—Nouns, Verbs, Pronouns, *etc.* The work tends to "drivel on and on" without clear aims, demarcations, or landing-points. The technique of "Writing Back" was employed to solve this problem. An interesting Plateau lesson (a dialogue or description or story) was written, then re-written and simplified several times.

It was then analysed to discover what new items (of structure or content) it contained. Then a lesson (Minus 1) was written to come in front of it working off some of these items and (usually) bringing in a few other items necessary for this (Minus 1) lesson. Then another lesson (Minus 2) was put in front of this (the Minus 1 lesson) so as to work off more of the required vocabulary. Then, if necessary, a Minus 3 lesson, and so on. The idea was that the pupil arriving at the Plateau lesson after studying Minus 3, Minus 2, Minus 1 lessons would be encouraged by the deceptively easy achievement in the Plateau. ("I can do this quite easily!").

Attempt 2 had the following defects:—

1. The "Plateau lessons" were spaced too far apart and the preparation for each was too long. This resulted in long stretches of rather formless, disjointed material.

2. The learning was by Simple Practice rather than by Attempted Recall and the individual pupil could not satisfactorily use the book alone.

This second point needs explanation.

---

[2] *"Teaching English under Difficult Circumstances, with Notes on the Construction of Textbooks"* (Longmans), contains the Minimum Adequate Vocabulary and tells how to make use of it.

When we speak a language we have an idea and put it into words; the best way of learning a language is to be presented with an idea and successfully recall the words required to express it. Reading words over and over as in learning Latin Gender Rhymes or set prayers is not an effective method. Now suppose an exercise consisting of a picture with questions and answers on it: if we put the picture and the questions on the same page of the textbook, the pupil sees the words when he is looking at the picture. If the pupils work in pairs and only the questioner keeps his book open, the questioned cannot see the picture and the questioner merely reads the questions. Both Attempt 1 and Attempt 2 suffered from this defect.

We have in all speech two factors—the Idea and the Words. The major problem of language-teaching is How to present an idea without supplying the words,—without either using the pupil's own language (with the evils of translation) or suggesting the answer in the foreign language. This is especially difficult where (as should always be the case) the learners are both questioners and answerers.

The Third Attempt—Let us call any device for giving an idea without suggesting its expression a 'Prompt'. It may be a picture, or a set of pictures as in a Comic strip, or Guide words, or Key words, e.g., Sailor, Lion, Tub, Knot (suggesting sentences in The Tale of a Tub), or a Diagram, or Question words, e.g. a picture followed by Who? (5), What? (3) meaning five questions to be asked beginning with Who and three with What.

A major problem was to get pictures which are capable of saying a lot in a very small space. This problem was solved by working out a highly simplified system of Augsberg figures (match-stick men, women, etc.)[1]

In the third attempt we tried to devise a system whereby the Prompts were put on the left of the page and the Words on the right; after studying the words with the Prompts the learners would cover the words and speak from the Prompts.

This attempt had two defects:—

1. It was impossible to balance the pictures and the text in

---

[1] A similar system was later used by Richards & Gibson in *Basic English through Pictures*, but here the pictures (which have words on or near them) are used rather as translations than as Prompts; that seems a pity since the book is intended for teaching speech.

such a way as to avoid large blank spaces on one page or the other.

2. There was too much emphasis on Content items.[4]

The Fourth Attempt—It was suggested to Dr. Palmer (distinguished as a grammarian) that, using any or all the techniques evolved in Attempts 1, 2 and 3, he should construct a set of textbooks giving the proper emphasis to Structural items in which the previous books had been defective.

These books[5] proved more satisfactory from the grammatical point of view than in respect of textbook technique. Their chief fault was that the pictures and the text were mixed and there were even in some cases words and sentences which were actually printed on the pictures, thus preventing learning by recall and the use of the book by an individual learner. As in Attempt 2, some of the units were very large, representing hours of work without a break. Moreover the course was somewhat formless especially in the early stages; and the later years were open to the criticism mentioned below.

The Fifth Attempt—This attempt was suggested by a remark made by Professor Firth: "Language is a form of behaviour". Language is spoken by someone to someone and he answers and this takes place in a certain situation which provokes it. The same idea underlies Professor Findlay's work.

In the four previous attempts there had been a lot of re-telling or rather unrealistic questioning: "Is this my hand?" etc., which could bear no relation to any real situation.[6] In this attempt[7] we selected a class of adults in a Night School. As they already knew a good deal of English, the Content Items were a minor problem: the emphasis was on Structure. The main idea was to find a situation[8] which embodied a Structural or other item and to supply a dialogue which could be practised in pairs and recalled with the help of Guide words. There were also exercises on minor points of idiom which arose in the course of the dialogue. The teacher introduced the dialogue, ensuring understanding and correct pronunciation. After that the class practised, while the teacher devoted himself to individual testing and correction.

---

[4] The name of this book was *Look & Speak*.

[5] *Practice Exercises* by Harold Palmer.

[6] See "Catavizing" reprinted from *English Language Teaching* in *Learning to Read a Foreign Language and Other Essays*, Longmans, 1955.

[7] *Improve your English* (Longmans).

[8] e.g., Two people starting out on a holiday: "Have you locked the back door?—stopped the milk?" etc., teaching the Present Perfect tense.

It was found that the dialogues had to be very short: not more than eight exchanges, that those based on Grammar and Emphasis Scales (Rather nice—Delightful, etc.) or those items (such as Polite forms and Delay words) which lie between grammar and vocabulary were most successful. Lessons which demonstrated vocabulary (e.g., varieties of meaning of a word) were failures. Guide words helped only the weaker pupils in this very mixed class. "Read and look up" (Never speak while looking at the book) was an effective method of learning.

This experiment was valuable in two ways:

1. It yielded a satisfactory Form of Lesson with a high proportion of Pupil-Practice time.

   (i) The *Teacher* introduces the new lesson, meaning and pronunciation : : *Class*: chorus for pronunciation.
   (ii) The *Teacher* goes round testing weaker pupils' pronunciation of the new lesson; then testing sample students in the old lesson : : *Class*: study—and practising new lesson.
   (iii) (Last quarter of the lesson. The Teacher drills any special points of grammar, usage, or pronunciation) : : the Class responds.

After the end of the experiment I was approached by the students with a prayer to continue because their new teacher "talks so much that we never get a chance of practising."

2. It offered a solution of the problem which always arises in the later stages of an oral course. It is noticeable that in almost all Oral Courses the work in the first two years proceeds according to a fairly standard pattern, building up a set of essential structures with the help of pictures, short passages, questions and answers about the immediate environment—classroom, home, town, etc. After that the course very often collapses into random anecdotes or literary snippets which have no obvious principle of selection but resemble rather "intensive study of a textbook" (as in the Classical Method.).

The method evolved in Attempt 5 bridges the gap between mere Speaking of a language and Language as a form of behaviour. Structural drills, however ingeniously devised, are always somewhat artificial and unrealistic forms of utterance, whereas conversation involves the clichés of politeness, the verbal replacement of 'Um' and 'Er', exclamations and the conveying of just the right degree of emotion.

In the Sixth Attempt we tried to introduce Language as a form of behaviour much earlier.

The Sixth Attempt—Language as a Form of Behaviour: This course was intended for young adult or adolescent beginners. The duologues (as in Attempt 5) were begun in Lesson 7 "I want to learn English"; the next was in Lesson 10 "In a Café"; 12 "Shopping"; 14 "The Bag-Snatcher"; than a gap to 19 "Asking the Way"; 24 "After the Party"; 33 "Dinner at Antoine's"; 34, 35, 36, . . . 40, 41, 42, . . . 45, . . . 47, 48 . . . From 52 onwards every lesson contained a duologue. All were under ten exchanges, usually eight, and all not mere exchanges of talk, but situational dialogues. Every duologue illustrated in a behaviourist manner some specific point of structure or grammar, e.g., "In a Café" (Some/Any); "After the Party" (Mine/Yours/Hers); "Dinner at Antoine's" (Would you like?). These duologues, or rather Playlets were fairly satisfactory, but the course was not and was scrapped.

It was formless. It consisted of stretches of exercises (Question and answer, Picture-question, Do and say, Poems, etc.) with the Playlets at intervals. It was indeed no more formless than most published Oral courses. But form is essentially necessary. The class must know every day what comes next and the obvious form for a lesson is

(i) *Content words* (those needed in Step 3): picture+word wherever possible.
(ii) *Drill of a structure:* The teacher drills the class, the drill being set out in the form of a Condensed Question and Answer Substitute exercise.
(iii) *The Playlet.*

The Seventh Attempt: This is a recasting of the Sixth attempt, every lesson being in the above form, and (after two phonetic lessons) the playlets start in Lesson 3 and continue throughout.

The sixth attempt suffered from the intrusion of Content-chains (as do most published courses). We believe that the function of a course should be to impart the Essential Structures and the Behaviour Pattern of the language using just such content words as are demanded by the situations in so doing. When we learn a language in the natural circumstances of the country in which it is spoken we do not acquire complete catenas (chains). The numbers, months, measures, colours, parts of the body and of clothing, etc., etc., are picked up haphazard as they enter into situations. Hence in Attempt 7 we listed the chains at the end of the book, to be learnt as such—and as needed. A lesson on the Seasons, Clothes, Parts of the Body is inevitably unrealistic. Some of these words might enter into a Situation (Farmers complaining, Buying clothes, Visit to the doctor or Street accident); but not a complete chain. This course was evolved as an exercise in the study, to see if it could be done, but not for publication.

Summary: We believe:

(1) that a language should be learnt with the help of a teacher —not taught by continuous oral drill by a teacher. The over-active teacher is the worst enemy of language-learning.

(2) that the spoken language does not consist of words, or sentences or of mere grammar: it is a form of behaviour and is learnt most easily and effectively as such—in situations with intonation, emotive and behaviour-clichés which belong to them.

This method of learning depends on the provision of a suitable textbook, and the training of the teacher to be guide and helper rather than active instructor. The teacher introduces the lesson and checks that it has been well and truly acquired. In between these two functions his duty is individual help and guidance.

TEACHING OF ENGLISH AS A FOREIGN LANGUAGE IN SECONDARY SCHOOLS

by E. A. Hill

PROFESSOR E. A. HILL, *who has contributed this paper, is at present the Chief Education Officer of the British Council, in India. He has long and rich experience spread over the last two decades in the field of the teaching of English as a foreign language in different countries.*

Professor Hill has been teaching English as a foreign language since 1939 and training teachers since 1946. He spent five years in Indonesia as a Professor of English Language and Head of the Department of English in the University of Indonesia. He is the author and co-author of numerous books and articles on the teaching of English as a foreign language and on linguistics in general and phonology in particular.

In this paper, Professor Hill presents an objective centred approach to the teaching and testing of English as a foreign language in India. He rightly stresses the point that before one starts teaching English, one should be crystal clear about one's specific objectives of teaching English, as the trinity in teaching the syllabus, teaching methods and testing primarily depends on the objectives and get their directions from them. He also suggests that before the teaching of English as a foreign language commences, decisions should be taken by the appropriate authorities and intelligently grasped by the teachers of English on the sort of English our students are desired to understand, speak, read, write and translate and also on the level of student attainment at the S.S.C. Examination. The author cautions that vagueness about any of these questions would lead to confused teaching, confused examining and frustrated teachers and students.

In the section on Examination, the author makes useful and practical suggestions for testing skills in understanding spoken English, speaking English, reading English with speed and comprehension, writing English and translating from and into English. He offers useful suggestions on the best and the quickest ways to develop these five major skills in students. His warning against divorcing language teaching from life and rushing through a prescribed 'text' is timely.

AIMS

BEFORE we start teaching any subject, we should state our aims clearly: What are we trying to achieve by teaching this subject?

What do we expect the students to learn from our teaching? What do we want them to have at the end of our course which they do not have now?

School subjects can be divided into two main types: those in which we aim to teach the children how to *do* something; and those in which we aim to give them information *about* something. The first type of subject is a 'skill-subject': we try to teach the students a skill—a new set of habits which will enable them to do something new. Carpentry is an example of a skill-subject. So is embroidery.

The second type of subject is an 'information-subject': we help the children to collect together a mass of facts about some field of knowledge. History and geography are examples of information-subjects.

In teaching English, there are five *skills* one can give the students, and one field which is an *information* field. The five skills are (i) the ability to understand spoken English; (ii) the ability to speak English in a way that others can understand; (iii) the ability to read English rapidly and understand it; (iv) the ability to write English which other people can understand; and (v) the ability to translate from and into English. One might add a sixth (minor) skill, the ability to read aloud well (i.e. to convert impressions which come in through the eyes into movements of our tongue, lips, etc.); but as this skill has very limited value in the modern world, I omit it here.

The information field I mentioned at the beginning of the preceding paragraph is that of grammar: if one wants to give the students information about the ways in which the English language is constructed, one is not teaching a *skill*, like driving a car, but a mass of facts, like history.

So before we start teaching we should be clear about our aims: Do we want our students to be able to understand spoken English when they finish their Secondary School course? Do we want them to be able to speak it intelligibly? Do we want them to be able to read it with understanding? Do we want them to be able to write it comprehensibly? Do we want them to be able to translate from and/or into it? Do we want them to have a stock of information about the structure of the language—its sound-system, the ways in which it builds up words (morphology), the ways in which it builds up sentences from words (syntax), and so on?

Perhaps we want our boys and girls to learn only two or three or four of these things; or perhaps we want them to learn all the five skills, but not the information *about* the language; or perhaps we want them to learn all five skills *plus* the information. Before we start teaching, we must be quite clear about our objectives. In most places, of course, the educational authorities will decide, but we, as teachers, should be able to show an intelligent interest in their decisions.

The next step is to decide what *sort* of English we want our students to understand, speak, read, write, and translate. For instance, if we want them to understand spoken English, do we want them to understand only the English spoken by their teacher and by other people in their town or village? Or do we want them also to be able to understand English spoken by people from other parts of India? Or do we want them to be able to understand Japanese people, and Brazilians, and Americans, and Russians, and other people from outside India, when these people speak English in an internationally intelligible way?

Similarly, if we want our students to speak English, do we want them to speak in such a way that they could make themselves understood anywhere in India; or anywhere in the world; or what?

Another question we have to decide, is what level we shall expect from the student if he is to pass his School Leaving Certificate examination. Let us take, for example, the reading skill (number (iii) above): will we expect a student to be able to read simplified English; or unsimplified contemporary English; or Dickens and Thackeray; or Shakespeare; or Chaucer; or what?

Vagueness about any of the questions raised in the preceding paragraphs of this paper leads to confused teaching, confused examining, and frustrated teachers and students. We have to say quite clearly: in our Secondary School English course we wish to give the students such and such skills (and, if we wish, such and such information); the level of attainment we shall expect in each skill is such and such (e.g. command of a 2,500 word vocabulary, 250 grammatical structures, *x* idiomatic expressions, and so on; or, perhaps, ability to read 20th Century non-technical literature; or whatever it may be). The aims should be laid down in considerable detail, so that nobody can say, 'Oh, I didn't know that that was what they wanted!'

EXAMINATIONS

After (or, in fact, while) deciding on aims, one must work out ways of finding out whether the aims have been achieved. I say 'while', because it is not much use including something as an aim if we have no way of testing whether it has been achieved or not. For instance, we may say, 'One of our aims is Skill (ii)—the ability to speak intelligibly'. But unless we have some way of finding out which students have achieved this aim and which have not, when they come up for their School Leaving Certificate examination, we might just as well omit it from our list of aims: both teachers and students do what the examinations force them to do; and if a particular skill is not examined, they will naturally not teach it—or if the timetable forces them to teach it, they will pay very little attention to it.

The examiner has enormous power for good or bad in the present examination system in India (and, for that matter, in most countries in the world). Teachers and students dance to the tune that he plays. So it is of vital importance that the types of test used in the examinations should *really* test what the educational authorities want to find out; and that they should *really* pass those candidates who *have* the skills required—up to the level required and that they should really fail those who have not. An examination which claims to test a student's skill in writing correct English (number (iv) above), but which consists of questions on grammatical theory, pieces for translation, and an essay question, the answer to which can be crammed up in advance and repeated parrot-fashion in the examination, is a bad examination. It is as if one were to claim that one was examining students in biology, and then give them questions dealing with physics.

How can we test our Skill (i) (understanding spoken English)? We can do it by giving ear-training tests (tests which find out whether a student can hear the difference between crucial pairs of sounds, e.g. the *s* sound in *see* and the *sh* sound in *she*). Tests of this kind can be administered quickly and effectively to whole groups of candidates at a time. Secondly, we can give a reproduction test, which consists of reading a passage aloud to the students twice, and then getting them to write down as much of it as they can, using their own words if they want to. The passage should be written within the vocabulary and structures laid down for that level.

Skill (ii) can be tested by conversation, i.e. by taking one candidate at a time and getting him to speak (one can ask questions such as, 'If I was a stranger in this town, how would you tell me how to get to the General Post Office?'). This, however, takes a lot of time, so it may not be practicable. There are pencil-and-paper tests which give the examiner a good idea of the sounds which students confuse when speaking. These can be administered to large groups at a time, and are easy to correct and score. Furthermore, ability to *hear* a particular sound-difference, and ability to make the same sound-difference have been found, by experiment, to be very closely connected, so that an ear-training test is simultaneously a good speech-training test.

The skill of reading rapidly for comprehension (number (iii)) can best be tested by giving the students a passage to read and then getting them to answer written questions about it. These questions can either be objective-type (in which the students have to choose between alternative answers which are given); or essay-type, in which the students have to write the answers out themselves, using only the information contained in the passage, but writing it in their own words as far as possible.

Skill number (iv) can best be tested, I think, by a combination of essay-type and objective-type tests. The latter can cover a wide range in a short time, and find out whether the students have a command of the vocabulary and structures which they are supposed to have learnt. The essay-type test, on the other hand, finds out whether they can collect ideas, arrange them in a proper order, and present them in reasonably good English, in legible handwriting. To avoid the cramming up of answers to essay-type tests, one can use pictures (the students are given a series of pictures which tell a story, and are asked to write the story which the pictures tell); or they can be given a rather detailed skeleton of what they are to write, so that they are forced to do what the examiner wants them to do, instead of just repeating back something they have learnt by heart.

The translation skill (number (v)) should, of course, be tested by translation tests. Here again, only those words, structures, idioms, etc. which the students are expected to know at this stage should be included in the translation tests, otherwise the test is merely a gamble, in which those students who have been lucky enough to learn the abstruse words chosen by the examiner are successful, while those who have not fail, even though they may know a large number of other words and structures very well.

I am myself convinced that translation is not a good test either of Skill (iii) or of Skill (iv). I have known people who were bilingual in English and another language, but were bad translators from one to another. Their translations did not show the fact that they could understand the language from which they were translating perfectly well; nor the fact that they were perfectly competent at writing in the language into which they were translating. Translation is a skill of its own, and a translation test shows only whether a person is a skilled translator or not.

I am also convinced that a test on theoretical grammar is not a test of any of the five skills. A student may be able to recite all the grammatical rules and exceptions, and yet he may write essays which are full of grammatical mistakes; and similarly a student may have a good command of the skills without knowing any of the theoretical rules. A theoretical grammar test is therefore purely a test of information: if we want to find out whether a student knows the *theory* of the structure of English, we can ask him questions about subjects and predicates, gerunds, participles and the rest; but we should not think that we are finding out anything about his ability to *use* English.

METHODS OF TEACHING

Once we are clear about our aims and about the ways in which we shall test whether these have been achieved or not, the way is clear to preparing the students for the examinations. At this stage, we have to find the best and quickest ways to give the students what they need to pass the examinations. These will at the same time be the quickest ways to give them what our aims say they should get.

If we want to teach them to understand spoken English, we must train their ears to detect the differences between crucial sounds, so that, for instance, they do not confuse *cart*, *cot*, *court*, *curt*, and *coat*. If we want them to understand English from other parts of India, or English from outside India, we must use gramophone records, or tapes, or the radio, or a combination of these.

If we want to include Skill (ii), we must train the pupils to pronounce the crucial sounds intelligibly (we need not—and cannot—teach a big class to pronounce them perfectly). We must not forget essentials of stress, rhythm and intonation.

For the reading skill, we must give students practice in reading rapidly for comprehension—starting with very simple passages and very easy questions in the early stages, and gradually progressing to more difficult passages and questions. Speed and accuracy of comprehension should be emphasised. Passages which are beyond the students' comprehension should be rigidly avoided: the aim is to train students to understand rapidly, not to teach them how to work out a puzzle. They cannot learn the skill of rapid reading for comprehension by practice in slow reading to decipher an acrostic.

For the writing skill, they should be given objective-type tests and graduated composition work, starting from copying from the textbook in the early stages, and then moving on, through copying from substitution tables; simple picture compositions, prepared in class; more difficult picture compositions—at first prepared in class, and in the later stages not prepared in this way; to composition on a skeleton, first prepared and then unprepared. The teacher should not move on from one stage to the next until the students are ready for it: nothing is more disastrous than, for instance, starting free composition before the students are ready for it; all it will mean is that they will hand in compositions full of mistakes week after week. This gives the teacher an intolerable burden of corrections, and *does no good to the students*, since every time they write something wrong, that thing becomes more firmly fixed in their memories, and the later correction by the teacher does not make a strong enough impression on their memories to remove the wrong thing that has become fixed there.

These skills must, of course, be practised on real language. This has to be taught, step by step, in a systematic, graded manner. Each new word and structure should, at least in the early stages, first be introduced orally by the teacher, in situations which will make its use in real life clear. The teacher should repeat the new word or structure often enough, in real situations, to give the students a chance to assimilate it. Then he should get them to practice it orally, again relating it the whole time to the situations in which it is natural. Language divorced from life is dead, boring and useless for practical purposes; and unless something is repeated a sufficient number of times, it cannot, of course, be fixed in the memory. Rushing through a 'text' in order to finish it by the end of the year is a useless activity: the students get only a smattering of what is in it.

After the students have learnt a word or structure orally, it is introduced in reading passages, and then used in composition work (in the later stages, it is quite possible to introduce new words and structures in reading pieces, provided they are repeated often enough, and presented in contexts that make their uses clear).

CONCLUSION

In this very brief outline, I have devoted most of my space to aims and examinations, since these dictate methods. The aims suggested, and the types of examination proposed have the purpose of equipping students to use English profitably after they leave school. If they go to a University, they will, for many years to come, have to read textbooks in English (one cannot translate all the necessary textbooks for a University in a few years, nor even in ten or fifteen years). In many Universities they will also, for some time to come, have to follow lectures given in English. They may have to write examination answers in English, and/or talk in seminars in English. All these things are provided for in the aims and examinations I have suggested.

If the students do not go to the University, it will help them to get better jobs if they have a working knowledge of English: whether they go into an office, or become teachers, or enter any number of other professions with chances of promotion, an ability to *use* English (not an ability to read aloud, or to cram up essay answers, or to detect subjects and predicates) will be worth money to them. This, again, is catered for in the aims and the examinations I suggest.

SELECT BIBLIOGRAPHY

A. Language.

Bloomfield, L., *Language*, Allen & Unwin, London.
Sapir, E., *Language*, Harcourt, Brace & Co., New York.
Gleason, H. A., *An Introduction to Descriptive Linguistics*, Henry Holt & Co., New York.

Hockett, C. F., *A Course in Modern Linguistics*, Macmillan, New York.

B. *English.*

Jespersen, O., *A Modern English Grammar of Historical Principles* (7 vols.), Allen & Unwin, London.
Essentials of English Grammar, Allen & Unwin, London.
Zandvoort, R. W., *A Handbook of English Grammar*, Longmans, London.
Fries, C. C., *The Structure of English*, Harcourt, Brace & Co., New York.
Roberts, P., *Patterns of English*, Harcourt, Brace & Co., New York.
Hill, A. A., *Introduction to Linguistic Structures: From Sound to Sentence in English*, Harcourt, Brace & Co., New York.
Hornby, A. S., *A Guide to Patterns and Usage in English*, Oxford University Press.

C. *Pronunciation.*

Jones, D., *An Outline of English Phonetics*, Heffer, Cambridge.
The Pronunciation of English, Cambridge University Press.
Armstrong, L.E., & Ward, I. A., *A Handbook of English Intonation*, Heffer, Cambridge.
Allen, W. A., *Living English Speech*, Longmans, London.

D. *Teaching English as a Foreign Language (Courses)*

Eckersley, C. E., *Essential English for Foreign Students*, (4 books, each with a Teachers' Book) Longmans, London.
Elliot, Mackay & Noonan: *English by Radio—Listen and Speak* (6 books) Macmillan, London.
Faucett, L. W., *The Oxford English Course* (5 books, each with a Teachers' Book) Oxford University Press.
Gatenby, E. V., *Direct Method English Course* (5 books, each with a Teachers' Book) Longmans, London.
Hornby, A. S., *Oxford Progressive English for Adult Learners*, (3 books, each with a Teacher's Book) Oxford University Press.
Morris, I., *English by Stages* (6 Reading Books and 6 Language Books) Macmillan, London.
Richards & Gibson: *English Through Pictures*, Pocket Books Inc., New York.
Bhandari, Spencer & Ram: *Read & Learn* (4 books) Orient Longmans, Calcutta.
Bhandari, Spencer & Ram: *Read & Tell*, 8 readers, Orient Longmans, Calcutta.
Hicks, D., *Foundations of English*, 3 books, each with a Teachers' Book, Longmans, London.
West, M., *New Method Series* (2 primers, 7 readers and 5 composition books) Longmans, London.

E. *Teaching English as a Foreign Language (Teachers' Books).*

Director: Patel, M. S., *Report on Seminar on English Teaching* (Dr. M. S. Patel, Baroda).
Fries, C. C., *Teaching and Learning English as a Foreign Language* (Ann Arbor, Michigan).
Frisby, A. W. *Teaching English*, Longmans, London.
Gatenby, E. V., *English as a Foreign Language*, Longmans, London.
Gurrey, P., *Teaching English as a Foreign Language*, Longmans, London.
Jespersen, O., *How to Teach a Foreign Language*, Allen & Unwin, London.
All India Council for Secondary Education: *The Teaching of English in Secondary Schools*, AICSE, New Delhi.

Morris, I., *The Teaching of English as a Second Language,* Macmillan, London.

The Art of Teaching English as a Living Language, Macmillan, London.

Palmer, H. E. & Redman, H. V., *This Language-Learning Business,* Harrap, London.

West, M., *Learning to Read a Foreign Language and Other Essays,* Longmans, London.

Central Institute of Education, Delhi: *The Teaching of English* (A Report) (CIE).

Mackin, R., *A Handbook for Teachers of English to Beginners,* Dacca, Pakistan.

Abercrombie, D., *Problems and Principles,* Longmans, London.

Menon & Patel: *The Teaching of English as a Foreign Language* (Acharya, Book Depot, Baroda).

UNESCO: *The Teaching of Modern Languages* (Her Majesty's Stationery Office, London).

F. *Dictionaries.*

Hornby, Gatenby & Wakefield: *An Advanced Learner's Dictionary of Current English,* Oxford University Press.

Jones, D., *Everyman's English Pronouncing Dictionary,* Dent, London.

West, M., *A General Service List of English Words,* Longmans, London.

G. *Pictures.*

Gatenby & Eckersley: *General Service English Wall Pictures* (with Teachers' Handbook and Pupils' Workbook) Longmans, London.

Bhandari, Spencer & Ram: *Read & Learn Wall Pictures,* Orient Longmans, Calcutta.

Crichton, J. S., *Blackboard Drawing,* Nelson, London.

Ramshaw, H. G., *Blackboard Work,* Oxford University Press.

Hill, L. A., *Picture Stories for Composition* (with Teacher's Guide) Longmans, London.

TEACHING OF MODERN EUROPEAN LANGUAGES IN SECONDARY SCHOOLS IN U.S.A.

by Theodore Anderson

DR. THEODORE ANDERSON, *the author of* Teaching of Modern European Languages in Secondary Schools of the United States *is a Professor of Romance (European Languages) at the University of Texas in the United States of America. Since 1937, he has been teaching Romance Languages in American Universities, and has been associated in varying capacities with the foreign language programme in his country. He was the Head of the Western European Section, Division of Cultural Co-operation, Department of State, Washington, D.C. (1945), Educational Adviser, Office of International Educational Exchange, Department of State (1945-46), Associate Director and Associate Secretary of the Foreign Language Programme in U.S.A. (1955-56) and its Director in 1956-57. Dr. Anderson was also the Director of Language Development Institute at the University of Texas. He ably directed the UNESCO Seminar on the Teaching of Languages for World Understanding in August 1953.*

Dr. Anderson is a writer and co-writer of several books including the two wellknown books The Teaching of Foreign Languages in the Elementary School (1953) *and* The Teaching of Modern Languages (1955).

The author begins his paper by referring to the present position in the teaching of Modern Foreign Languages in the Comprehensive Secondary School in the United States, which, according to many who are competent to judge is far from satisfactory. This position has been greatly rectified under the National Defense Education Act of 1958. The author refers to the useful work done by the Language Department Section of the U.S. Office of Education in better equipping and enlightening the teacher of modern foreign languages. A great leeway has been made recently in improving the process of recruiting, training and licensing teachers for teaching modern foreign languages in the American Secondary School.

The author refers to the "New Key" in the teaching of languages which emphasizes 'hearing and speaking' in the initial stages leading to direct communication with native speakers of the language and the ultimate aim of better understanding of their culture. The spoken language learned by observation of native speakers through the agencies of movies and the imitation of their way of speaking through tape recorders and gramophone discs are important trends in the recent foreign languages teaching in U.S.A. That ear-training of an extended period without the use of books *is a very significant feature of teaching foreign languages is being amply demonstrated and proved by teachers of foreign languages in United States.*

THE year 1960 finds us in transition or, rather, at the beginning of a period of reform. "All indications point to a renaissance of language teaching and language learning in our secondary schools."[1] The American public, whose conscience must be touched before any educational reform is possible, is at long last aware of our linguistic shortcomings. The teaching of modern languages, like many other aspects of American education, has been severely criticized. James B. Conant, former President of Harvard University and former Ambassador to the Federal Republic of Germany, who has completed a two-year study of the American high schoool says, "Almost without exception, I found a deplorable state of affairs in regard to foreign languages."[2] I have elsewhere tried to summarize the views of many language teachers in the following statement: "The present state of modern foreign language instruction in the U.S. can best be characterized by observing simply that if we were to set out to organize our teaching as INEFFICIENTLY as possible we would invent a system very much like the one which persists in most of our schools and colleges."[3] The truth is that World War II caught us completely unprepared linguistically, requiring that we mount a remedial program at a cost of some $40 million. A study commission under the chairmanship of Henry Wriston, former President of Brown University, has focussed attention on the linguistic deficiencies of our Foreign Service officers, 50% of whom do not have a useful knowledge of even the most common European languages, French, German, or Spanish. A current best-seller, *The Ugly American* has done much to popularize the realization of our language deficiencies, and it has become fashionable to contrast us in this regard with the Russians, to the advantage of the latter.

Long before it became so popular to denounce our teaching of languages, the Modern Language Association of America expressed its concern by making a six-year study of the situation with the support of two successive grants by the Rockefeller Foundation and suggested needed reforms. Scholars and practical people are often contrasted, but it was one of our leading humanists, William R. Parker, the 1959 President of the Modern Language Association and for ten years its Executive Secretary, who best expressed, in his book *The National Interest and Foreign Languages* the *practical* need we have of languages in today's world. It was in fact this book and the careful assembling by the Modern Language Association of information concerning the teaching of modern foreign languages which led to needed legislation.

---

[1] "Modern Foreign Languages in the Comprehensive Secondary School," a preprint from the BULLETIN of the National Association of Secondary-School Principals, June 1, 1959, p. 4.

[2] *The American High School Today*, New York, McGraw-Hill Book Company, Inc., 1959, p. 69.

[3] "Keying Foreign Language Instruction to the National Interest", in *The Educational Forum*, March 1959, p. 277.

The passage of the National Defense Education Act of 1958 in August and its signing by President Eisenhower on September 2 signalled a new era in language teaching and learning in the United States. After more than a decade of mounting dissatisfaction with language teaching this new law put at the disposal of educators the means of undertaking the active reform so badly needed. The main features of the language improvement program which are made possible by the Act are:

(i) scholarships and fellowships for future language teachers and scholars;

(ii) university institutes for the training and retraining of elementary and secondary school teachers in the use of modern methods;

(iii) university centers for the study of less usual but strategic languages such as Arabic, Chinese, and Hindi;

(iv) encouragement of language laboratories through grants to state departments of education;

(v) the subsidizing of state co-ordinators of foreign languages; and

(vi) an extensive program in research and experimentation.

The provisions of this Act are administered by the U.S. Office of Education, which in less than two years' time has expanded its language staff from two to more than two hundred. Besides serving as a clearing-house of information and co-ordinating research, institutes, and centers, the Language Development Section of the U.S. Office of Education publishes bulletins and other documents of use to language teachers. Particularly worthy of mention are the following: Bulletin 1958, No. 16, *Modern Foreign*

Languages in the High School, edited by Marjorie C. Johnston, issued by the U.S. Government Printing Office, Washington 25, D.C. ($1.00), which is particularly valuable in defining the changing character of our language teaching in the high schools; Bulletin 1959, No. 3, *Foreign Language Laboratories in Colleges and Schools,* by Marjorie C. Johnston and Catherine C. Seeley, U.S. Government Printing Office, ($.35); Circular No. 509, September 1957 (Revised 1959), *Useful References for Teachers of Foreign Languages,* by Marjorie C. Johnston; Circular No. 495, Revised, June 1959, *References on Foreign Languages in the Elementary School,* by Marjorie C. Johnston and Ilo Remer; Circular No. 583, June 1959, *Modern Foreign Languages in the Secondary Schools: Prereading Instruction,* by Patricia O'Connor, one of the best expositions of actual methods of teaching with emphasis on pattern drills.

One of the largest recipients of grants-in-aid of research is the Modern Language Association of America, which has established a Foreign Language Program Research Center under the direction of Donald D. Walsh at 70 Fifth Avenue, New York 11, New York, for the gathering of important information and the coordination of various research projects. One of the most important of these is the development of a series of tests to measure as objectively as possible the proficiency of secondary school teachers of modern foreign languages. It is hoped that by this means the whole process of recruiting, training, and licensing teachers may be greatly improved in each of the seven areas of competence defined by the Modern Language Association and first published in PMLA, Volume LXX, No. 4, Part II, (September 1955) pp. 46-49 and since republished many times.

The National Association of Secondary-School Principals, a department of the National Education Association, chose as the major project for 1958-59 of its Committee on Curriculum Planning and Development, the subject of "Modern Foreign Languages in the Comprehensive Secondary School." This very important up-to-date report provides principals with badly needed help and advice in the organization of effective language teaching.

Individual states are also taking vigorous action. At least four—Connecticut, New Hampshire, Illinois, and Texas—have studied the language situation and published reports. Most of the states have now appointed language consultants, are providing new services for language teachers, and have made available funds for introducing language laboratories in many high schools.

In addition to this organized activity many individuals are of course making important contributions, especially in the form of publications. Especially worthy of note are a new book on *Language and Language Learning: Theory and Practice* by Professor Nelson Brooks of Yale University, to be published shortly by Harcourt, Brace and Company, in New York. Professor Brooks is a language teacher with long experience in secondary schools and college teaching, and gifted with an incisive style. Another important book is written not by a language teacher but by an anthropologist, Edward T. Hall. *The Silent Language,* published in 1959 by Doubleday, New York, considers language as behavior and provides language teachers with a point of view which for many of them is new.

This ferment in languages is something new in American education. What is new also is the kind of language teaching being done. To describe it, the term "new key," coined by the present Executive Secretary of the Modern Language Association of America, George Winchester Stone, Jr., has been widely used.[4] Teaching in the new key emphasizes hearing and speaking in the initial stages leading to direct communication with native speakers of the language and the ultimate aim of better understanding their culture.

To understand the new trends in modern language teaching in the United States today, let us make an imaginative visit to the classroom. What conception do teachers have of language and of the basic psychology of language learning? What are their objectives and methods? What are the preliminary results of the new procedures and the prospects for the future?

Thanks to the work of anthropologists like Clyde Kluckhohn (*Mirror for Man*) and Edward T. Hall and linguistic scientists like Charles C. Fries and Henry Lee Smith, Jr., among many, language teachers are coming to understand that language is primarily speech, not writing, and that as communication it is an essential part of human behavior. As a result, the language teacher is stressing the spoken language, learned by observation (movies) and imitation of native speakers (tapes, discs).

---

[4] (See my *Languages in the New Key,* PMLA, Vol. LXXII, No. 2, April 1957, pp. 49-55.)

Collaboration between language teachers and psychologists has not yet proceeded far, but much can be learned concerning the nature of language learning by watching how children learn their own mother tongue. Readers will remember the charming passage in François Gouin's *Art of Teaching and Studying Languages* (New York, Scribners, 1892), in which the author describes what a revelation it was for him to observe his three-year old nephew learn a whole new vocabulary having to do with a mill. Teachers in the classroom are following the order of learning used by children, namely, hearing, understanding, speaking, reading, and *last of all* grammar.

In the words of the NASSP study, *Modern Foreign Languages in the Comprehensive Secondary School*, "a chief purpose of studying a modern foreign language is for mastery of the language as a medium of communication. . . . It aims to give the student direct experience with language as a means of communication, its outcomes are the ability to understand standard spoken language on subjects within the student's experience, to speak within the same limits, to read without translation, and to write what can be spoken . . . with grammar learned through mastery of speech patterns." In addition to the intellectual value to the individual, language learning aims at direct communication with native speakers of other languages and, hopefully, an understanding of their culture and way of life.

The modern teacher of languages tries of course to give his students as vivid an understanding as he can of the nature of language and language learning and of these various objectives. Many teachers have found useful for this purpose a tape recording prepared by anthropologists Walter Goldschmidt and Harry Hoijer of the University of California, Los Angeles, called "A Word in Your Ear."[5]

What then are the best methods for achieving the desired objectives? First, teachers are coming to believe in the necessity of a rather extended period of ear-training without the use of books or print in any form. In the Language Development Institutes last summer this method was used in the demonstration teaching and gave universally good results. Special materials were developed by a committee headed by Miss Mary P. Thompson, Director of Curriculum and Instruction, Glastonbury Public Schools, Glastonbury, Connecticut, on contract from the U.S. Office of Education. The Office of Education has made single copies of these so-called "Glastonbury Materials," available to teachers in French, German, Russian, and Spanish with permission to reproduce.

---

[5] This tape, available for $8.00 is distributed by the National Association of Educational Broadcasters, 14 Gregory Hall, Urbana, Illinois.

James H. Grewn (See "Another Experiment," *The French Review*, October 1956, pp. 41-47) is one of the most enthusiastic practitioners of the bookless approach, which he uses for an entire academic year. The advocates of this approach cite two advantages: (1) the absence of writing forces the learner to depend entirely on his ear for meaning. Learning to understand meaning through the eye is, they say, like learning the touch system on the typewriter by watching the keys; (2) students seeing foreign words represented by familiar letters will find it difficult to resist the temptation of giving to the foreign words the phonetic values of their own language.

The bookless approach was demonstrated in the 1959 University of Texas Summer Institute in Foreign Languages. As a result most of the 78 teachers who attended the Institute are experimenting with this same approach in their high school classes this year. One enthusiastic teacher writes "It works, it works! It really works! How I wish you could hear some of my first-year Spanish students after four weeks of drill on the Glastonbury materials. They amaze me. . . . It is an open secret that I, like many of my colleagues, took a rather dim view of the aural-oral method—at first, anyway—but felt that the only thing to do was to give it a fair trial." The same teacher concludes by saying that her new experience is one of the most wonderful things that has ever happened to her.

It is of course not enough just to introduce materials orally. They must be graded and practiced properly. This concept of graded structures is another contribution of linguistic scientists and is gradually finding its way into more and more books on the teaching of modern foreign languages. An excellent example is the recent book on *The teaching of English as a foreign language* (Structural approach), by T. K. N. Menon and M. S. Patel, Baroda, Acharya Book Depot, 1957, which describes the modern concepts of language teaching and which lists in an appendix some 275 structures which are basic to English.

Next after the so-called bookless approach the most important technique to be found in the modern language classroom is the so-called pattern drill. Various possible forms of pattern drill and classroom procedure are described in detail by Dr. Patricia O'Connor in *Modern foreign languages in the secondary school: prereading instruction*, Circular 583, June 1959, Office of Education, U.S. Department of Health, Education, and Welfare, Washington 25, D.C. The importance of this kind of approach is that grammar is no longer learned by rule but by induction. Practice with a given structure has to be continued long enough for the pattern to be thoroughly understood and firmly established as a habit. Grammar is, by this system, not neglected, as many think, but rather more thoroughly learned than usually is possible by the traditional prescriptive approach.

What are the prospects for the future? As we have noted, teachers are generally enthusiastic about the "new key," and language classes are much more popular with students when the objectives of understanding and speaking are stressed. Enrolments are mounting, languages are being studied for longer periods of time, (See *Foreign Language, grades 7-12,* Curriculum Bulletin Series, No. V (Tentative), Hartford, Conn., State Department of Education, September 1958) standards of achievement are generally being raised, the public is recognizing the need of more and better speakers of other languages, and Congress seems bent on achieving much higher standards in our foreign service. Taking advantage of this new interest and enthusiasm, the U.S. Office of Education, the Modern Language Association of America, and other national, state, and local groups, are working hard to develop materials, methods, and tests, as well as research and experimentation in order to strengthen further the teaching of modern foreign languages. In general, the outlook for the teaching of European languages in the secondary schools of the United States is as favorable as it has been for many a decade.

RECENT TRENDS IN THE TEACHING OF MODERN INDIAN LANGUAGES

by D. M. Desai

DR. D. M. DESAI, *the author of* Recent Trends in the Teaching of Modern Indian Languages *who is at present Reader in Educational Administration in the Faculty of Education and Psychology of the Baroda University, has a record of rich experience and achievements. He has been a Headmaster in one of the leading high schools in the Bombay city and later an Associate Professor in the Indian Institute of Education, Bombay. When the Ministry of Education of the Government of India sanctioned Extension Departments in some of the leading teacher education centres in the country, Dr. Desai joined the Faculty of Education and Psychology as the Assistant Co-ordinator of Extension Programmes. On the recommendation of the Association of Training Colleges in India, he was later deputed by the Government of India to the U.S.A. to study the recent trends in evaluation and examination. On his return, the Government of India utilised his services as an Evaluation Officer attached to the Directorate of Extension Programmes for Secondary Education.*

Dr. Desai here makes a strong plea for effective measures to reorient the teaching of Indian Languages in our schools with a view to developing in the pupil those language skills which are essential for effective citizenship and for leading a fuller and richer individual life. The author enumerates the important objectives of teaching modern Indian Languages which should determine the construction of curriculum in languages and shows how these objectives by and large are neglected in our schools. It is imperative that the important objectives are translated in terms of behavioural changes. The behavioural analysis of objectives would have the further advantage of pin-pointing the focal points of learning experiences. Dr. Desai illustrates this well known process in the context of the teaching of modern Indian Languages with which evaluation experts are familiar. The paper concludes with valuable suggestions for developing learning experiences for the attainment of some of the important objectives of instruction regarding reading, speaking before a group and grammar.

ATTAINMENT of skill in using one's own mother tongue in meeting effectively the varied and complex life situations has become in modern India a vital requisite for every citizen, and schools, both elementary and secondary, have in this respect a vital obligation to discharge. That our schools are not shaping satisfactorily in discharging this social obligation is a sorry and sordid fact. The situation calls forth effective measures to reorient the language teaching in our schools to the development of those language skills which are essential for effective citizenship and for leading fuller and richer individual life.

The present short-comings of language teaching in our schools stem out from the fact that it is not specifically geared to the primary goals of language teaching. Unfortunately, our school administrators and teachers of modern Indian languages have not adequately realised the fact that a modern language is not primarily a body of facts (like history, geography or a physical science) to be learnt but it is a complex of skills to be achieved; it is not beaded together prose, poetry, grammar and composition but is a study and practice of the essential communication skills of reading, writing, speaking and listening. Getting students merely go through the grinding of prescribed number of pages of prose and poetry and prescribed portion of grammar and composition may not develop in them the essential language skills. Skills do not develop accidently or incidently. They are the end-products of appropriate and adequate learning experiences on the part of the students which in their turn depend upon precise and clearly formulated instructional objectives in the field. This gives us the clue to the improvement of present practices in teaching of modern Indian languages which is to gear directly and closely the learning experiences of students to the specific instructional objectives of teaching modern languages.

OBJECTIVES OF TEACHING MODERN INDIAN LANGUAGES

The formulation of objectives should be the starting point of all curriculum planning and developing teaching methods or techniques in any field of learning. The objectives of classroom teaching of modern Indian languages should be distinguished from the ultimate goals which in case of modern Indian languages are: the development of vocational competence, of satisfying personal lives and of social values and effective social participation.

Unlike other curricular subject areas, the objectives of modern Indian languages provide a simpler task, as the nature of languages delimits and specifies the objectives and there is a larger measure of agreement among the language teachers about the specific objectives of teaching than among the teachers of other subjects. This observation is amply substantiated by the reports of seminars and workshops on teaching and evaluation in modern Indian languages which present almost identical objectives of teaching modern Indian languages.

The major objectives of teaching modern Indian languages are to develop in students:

(i) skill in listening,

(ii) the ability to converse courteously, consistently and pointedly,

(iii) the ability to speak the language correctly, clearly, fluently and efficiently,

(iv) the ability to read aloud in correct, clear and expressive manner,

(v) the ability to read silently with comprehension and speed,

(vi) the habit of reading healthy literature for pleasure, knowledge and the enrichment of personality,

(vii) the skill in using dictionary, encyclopaedia and such other reference literature,

(viii) the stock of functional vocabulary,

(ix) the ability to spell words correctly,

(x) the ability to use the appropriate words or phrases to convey the intended sense.

(xi) the ability to write correctly,

(xii) the ability to write with speed in a legible hand,

(xiii) the ability to expand and paraphrase ideas,

(xiv) the ability to present ideas in writing in logical sequence and with proper paragraphing,

(xv) the ability to summarise and bring out central ideas,

(xvi) the ability to practise creative composition,

(xvii) the understanding of the principal characteristics of various forms and types of literature in modern Indian languages,

(xviii) the ability to enjoy stories, novels, dramas, poems, essays and accounts of travels and adventures, and

(xix) interest in the literature of the mother tongue and of sister Indian languages.

These are the primary and specific objectives of teaching modern Indian languages. These objectives should determine the curriculum in languages, and they should be the focal points around which and for the attainment of which the language teaching in our schools should be specifically organised.

THE NEGLECT OF CERTAIN OBJECTIVES IN OUR SCHOOLS

One of the objectives of teaching a modern language that is seriously neglected in our schools is the one that refers to the development in the student the skill in listening. This neglect is really tragic, because both the average student and the average adult spend more time in listening than in reading, writing or expression. A study in U.S.A. points out that "actually the average adult spends approximately three times as much time in listening as he does in reading".[1] In India the proportion for the adult should be unmistakably more in view of the fact that only 317 out of every 1000 males and 890 out of every 1000 females can read. In case of students and adult literates, listening has been the main channel through which information is received. In U.S.A. a survey was designed sometime back to discover the amount of listening an average American school child is expected to do during the school hours of a day, whether teachers themselves know about the amount of listening the student is expected to do and the relative importance language teachers place upon the principal four areas of language teaching, viz., listening, reading, writing and oral expression. The results of this survey, as summarised by Wilt, is quoted below because the situation in Indian schools in matter of student listening is not very much different from that in American schools.

> "Pupils are expected to spend more time in listening than in any other single activity of school. Teachers are unaware of the above fact. Moreover, they apparently are more concerned about the individual who is reading aloud or speaking than they are about the listeners. Almost fifteen hundred teachers estimated that children learn through reading approximately 110 minutes of the average school day, and through listening 78 minutes. Actually, the median amount of listening time was 158 minutes, 54 percent of which was spent in listen-

---

[1] Greene, Jorgensen and Gerberich : *Measurement and Evaluation in Secondary Schools*, p. 393.

ing to the teachers, 31 percent in listening to the other children and 15 percent in miscellaneous listening".[2]

No such survey is known to have been made with reference to Indian students in schools and colleges. But it is quite probable that the Indian student like his counterpart in U.S.A. or any other country learns considerably through listening. The logical conclusion of this fact is that the importance of the objective of listening should be recognised by planners of curriculum in modern Indian languages and the language teachers and a place of importance should be granted to listening 'at least equal to that of reading'.

There are other objectives of teaching of modern Indian languages which, though not altogether neglected as in case of the objective of listening, are not adequately taken care of in our schools. Among such objectives mention must be made of those that concern with courteous, consistent and effective conversation, fluent and effective speech, pointed discourse, habit of using references and interest in the literature in modern Indian languages. These objectives are really important and in the context of demands of modern life, they should be adequately taken care of in our schools which are calculated to be the training centres of the future citizens. The objectives of reading and literature have deeper significance than what is ordinarily realised. "The ability to read opens up rich avenues of enjoyment and pleasure which provide the media through which the individual can become acquainted with life, its meaning and significance. Reading reveals those aspects of life, its activities, ideas, ideals and emotions about which human interests cluster".*

BEHAVIOURAL ANALYSIS OF OBJECTIVES

Education is a process of effecting desirable changes in what and how the child thinks, feels and acts. It is, therefore, imperative to translate all objectives of teaching in terms of behaviour changes deemed desirable, and that are practicable at the mental growth of the child. In a subject like a modern language, the behavioural analysis of objectives would have further advantage of pinpointing the focal points of learning experiences that would in their turn help in effecting the behaviour changes. An example of the behavioural analysis of an objective of modern Indian languages is given below to illustrate the process.

---

[2] Miriam, E. Wilt: *A Study of Teacher Awareness of Listening as a Factor of Learning*, Jr. of Edul. Res. April 50.

[3] Greene, Jorgensen and Gerberich: Op. cit., p. 395.

Objective: To develop in the student the ability to comprehend (what is written) with reasonable speed.

Behaviours: The student—

(i) skims through the reading material.

(ii) He gets the necessary background after reading the first few sentences of a passage or the introductory section of a novel or other types of literature.

(iii) He infers the meaning of new words, and phrases from their contexts and keeps engaged in reading without being required to refer to a dictionary immediately.

(iv) He gets at the main ideas or train of thoughts expressed in the reading material.

(v) He can arrange the ideas expressed in the reading material in logical sequence.

(vi) He calls up to his imagery ideas previously read or heard by him and which are similar to or different from those expressed in the passage.

(vii) He identifies himself to a large extent with some character in the reading material and experiences the same feelings and emotions OR he catches the spirit of the reading material. (Such an identification helps him to gain more speed in reading without inhibiting his progress.)

(viii) He avoids lip movements and finger guides while reading fast for pleasure or information.

It would be necessary to subject other objectives of teaching modern Indian languages to similar behavioural analysis. If a teacher knows what a student can and should do for the attainment of an objective, what will then be required of him will be to plan appropriate learning situations for the student and motivate him so that he goes through learning. This is the crux of learning experiences. The behavioural analysis of objectives suggests to the teacher both the form and the content of the learning experiences to be provided to the sudent in order to help him achieve the objective—develop the desired language skills.

SOME SUGGESTIONS FOR DEVELOPING LEARNING EXPERIENCES

As stated earlier, the basis of the learning experiences in the field of modern Indian languages will be their specific instructional objectives. Each objective needs to be further translated in terms of desired student behaviour. All the language teachers teaching the subject in different grades of a school or schools should pool their thinking together and specify the objectives of language teaching for different grades and also determine the priority and weightage to be given to different objectives in different grades. It would be a good plan to map out the desired behaviours under each objective through the cumulative thinking of the language faculty and take decisions regarding the behaviours under an objective that can be taken care of in a particular grade, and the weightage to be given to the same behaviour in different grades. Language is primarily skills. Language skills develop as a result of carefully planned adequate and appropriate learning experiences spread over the period of schooling. Even at individual grade levels, students need to be given learning experiences involving varied and many situations. Motivation, active participation and drilling would determine to a large extent the effectiveness of learning experiences geared to objectives and behaviours.

Below are given some broad suggestions for developing learning experiences for the attainment of some important objectives of teaching modern Indian languages.

Reading: As a receptive language art, skill and interest in reading is of great social values. Learning experiences in reading should not be limited to the study of prescribed text books and supplementary readers. The prescribed text books should be so dealt with by the language teacher that the students feel motivated to read the original novel, the drama, the story-collection, the poetry book, the biography or the travel from which the passage included in the reader has been selected. A good treatment of the lesson is the best motivation for developing reading interest. Other curricular subjects can also provide motivation. Problem-assignments set in history, geography and science put the child on the right road to developing wholesome attitudes and interests in reading. Many a social and cultural activity can be turned by a resourceful teacher into a motivated situation for undertaking reading. A teacher who himself has wholesome interest in reading is likely to exert a strong influence in cultivating desirable reading interest. The free reading programme, as it obtains in many American secondary schools, promotes reading interests distinctly in advance of those which usually characterise adolescents. The opportunity provided to students to scan and discuss book reviews also tends to develop a desire in them to identify good books to read. In this way the teacher can plan out various learning situations to motivate the child to read beyond the prescribed text-books. This is an area of learning where school faculty discussion and corporate planning would yield good result.

Courteous Speech: The primacy of speech in every day use should be recognised and it should receive careful attention of a language teacher. Though our Indian languages abound in polite, courteous expressions, our greetings and conversations do not quite reflect courteousness. This task of helping the child to use his mother tongue gracefully and courteously while replying a telephone call, or greeting a stranger, replying a query or carrying on a social conversation should be taken up right from the elementary classes and should be persisted throughout schooling. This important social objective of language teaching is very much neglected in our schools and that has affected unwholesomely the social behaviour of our children. The teacher should exploit all such occasions when children have to answer a call, reply a query, request information, meet a stranger, work with classmates and other school children to inculcate in them the habit of using courteous language.

Speaking before a Group: The average Indian school pupil is shy of speaking before a group. There are many causes for it. But inadequate language teaching has also something to do with it. The language instructional programme in our schools has become so formal and stereotyped that our students are not provided sufficient experiences to express themselves before a group in seminars, workshops, panel discussions and debates. What is said of language teaching is also true of other subjects specially social studies. The present unimaginative practices in schools to keep strictly to the letters of prescribed syllabus and eschew all possibilities of innovations and experimentations has greatly to do with the sorry state of affairs. In democratic India the ability to address a group is of great importance for most of her citizens, and it is desirable that the school faculty jointly plan out learning experiences pooling together the resources of all subject areas to attain this objective.

Composition: The learning experiences for objectives regarding written expression have also been narrowly conceived in our schools, with the detrimental effects on pupil attainments in creative expression. The intimate relationship between the expressional skills of speech and writing is recognised in principle but not adequately put into practice. The set exercises in composition on routine topics should give place to the expression of students' real experiences and practical and creative activities. Writers in U.S.A.[4] on compositional activities in school suggest uses of speech and writing for problem-solving, for expressing real and vicarious experiences, for focussing on "functional centres" of activity and community.

Some schools in India have also experimented[5] on group work in compositional exercises with satisfying results as regards both the richness of content and correctness of language. In this approach, the class works in small groups of three to four students. Each group selects an experience from personal life or community life and each member of the group views it from a different angle. The preliminary group discussion prepares the way for actually writing down the experience. The group then considers what each member has written and offers suggestions mostly regarding the correctness and effectiveness of expressions.

What is needed is to relate closely speech and writing to felt needs, real experiences, and practical and creative experiences of students. This should guide the organisation of learning experiences in compositional writing.

Grammar: The wisdom of providing separate instruction in grammar for helping the student to write correctly is being seriously challenged. Researches in U.S.A. point out "The comparative inefficiency of grammatical analysis in improving usage—especially that of the student most in need of help—and the inability of the younger or slower students to profit from the study of grammatical abstractions particularly when such study is divorced from actual practice in speech and writing". One observation in a piece of research is very significant, "The conclusion is inescapable that once having learned our present grammatical system completely, one is still unable to use it in dealing with language problems, since the tool is unrelated to the job".[7]

---

[4] Searles, John R. and Carlsen, G. Robert: *Language Grammar and Composition* (English), Encyclopaedia of Educational Research, p. 457.

[5] Pires, E. A. (Ed.): *Experiments in Schools*, Ministry of Education, New Delhi, 1957.

Language teachers usually contend that the knowledge of grammar gives the child a basic tool that will improve his ability to use his language in oral and written situations. According to most of them the study of grammar is necessary to improve usage, to understand literature or to learn a foreign language. Researches[8] of Hoyt, Rapeer, Storm and others in U.S.A. have failed to substantiate this contention. The retention of grammatical knowledge on the part of students is also of doubtful values.

The results of researches cited above do not justify organising separate learning experiences in grammar. Grammar should be related to oral expressions and written composition forming learning experiences.

These are broadly the recent trends in the teaching of modern Indian languages. Specific objectives of teaching provide the axis around which the curriculum, methods of teaching, text-books, teaching aids and examination revolve. The efficacy of the instructional programme of a school not only in languages but in every subject of curriculum, depends primarily in achieving integral relationship among the educational trinity—the instructional objectives, learning experiences including curriculum, teaching methods and teaching aids and evaluation. Here is a task in which the training colleges and progressive schools have to give an effective lead.

SELECTED BIBLIOGRAPHY

All India Seminar on the Teaching of Indian Languages—(Report), Jabalpur, Prantiya Shikshan Mahavidyalaya, 1958.

Brown, J. I.: *Efficient Reading*, Boston, D. C. Heath & Co., 1952.

Greene, H. A., Jorgensen, A. N. and Gerberich, J. R.: *Receptive and Expressive Language Arts: Measurement and Evaluation in Secondary Schools.* New York, Longmans Green and Company, Chapters 16-17, 1955.

---

[6] Searles, John R. and Carlsen G. Robert: Op. cit., pp. 459-60.

[7] Ibid.

[8] Ibid.

Harris, A. J.: *How to Increase Reading Ability*, New York, Longmans Green and Company, 1947.

LANGUAGE: *Some Suggestions for Teachers of English and Others.* H. M. S. O., London, 1954.

Lyman, Rollo L.: *Summary of Investigations Relating to Grammar, Language and Composition*, Chicago, University of Chicago, 1949.

Olson, Helen, F.: *Teaching Basic Skills*, English Journal, 1950.

Pooley, Robert C.: *The Teaching of Literature*. Encyclopaedia of Educational Research, Third Edition, 1960, pp. 471-476.

Report of the Evaluation Workshop (Bardoli) in Gujarati, Baroda. Department of Extension Services, Faculty of Education and Psychology, 1958.

The Teaching of English. Issued by the Incorporated Association of Assistant Masters of Secondary Schools. Cambridge University Press, 1952.

Searles, John R. and Carlsen, G. Robert: *Language, Grammar and Composition.* Encyclopaedia of Educational Research, 1960, pp. 455-470.

Furst, E. W.: *Constructing Evaluation Instruments*, New York, Longmans Green and Company, 1958.

TEACHING OF HISTORY IN SECONDARY SCHOOLS

by J. R. Reeve

MR. J. R. REEVE *who discusses here the Teaching of History in Secondary Schools is the well known author of* History Through Familiar Things *which was first published in 1935 and which has gone through seven editions. After a distinguished career in the King's College, London and the London School of Economics, Mr. Reeve entered the teaching profession and worked as the Head of central and secondary schools in England. He was the headmaster of the Battersea County Secondary School from 1946 to 1955 and the President of the London Head Teachers' Association in London during 1937-38. To Mr. Reeve's authorship belongs also* This Changing Age *and* The Craftsman and the Machine.

The author here rightly claims that history is the key subject in the curriculum because in the present-day world of scientific and technological advance, it is history that could counteract the worship of science and technical invention; he shows the importance of the cultural, spiritual and humanistic aspect of a healthy and happy society. The aims of the study of history in the secondary school are enumerated here and a critical reappraisal of the familiar methods of teaching history made. The author feels that these methods do not meet the real purposes of teaching the subject and advocates a new approach—a practical or realistic approach. It is the interest of the pupil in his environment to which the teacher must turn to give a realistic approach to the study of history. In the same context, the teacher can through this approach interpret the historical process, the scientifically related sequence of cause and effect which is the true interpretation of history. Unrelated events have no meaning, but events of the past which have a related sequence help to explain our present world.

EDUCATION assumes a new importance in a changing world. While the great scientific discoveries of our time tend to stress technical education, and indeed the need to raise living standards makes this imperative, it would be folly to forget the importance of the cultural, spiritual and humanistic aspect of a healthy and happy society. We hardly need to be told, to-day, that the worship of science and technical invention may mean our destruction if not seen in proper perspective. And history, as a study in the schools and the universities, has a great part to play in developing the right approach. Incidentally it should be noted that the history of scientific progress has been recommended as a compulsory study in the education of science and technical students to correct what tends to be a one-sided development of such students. A. L. Rowse in *The Use of History* has claimed that history is the key subject of the curriculum. That is why we should teach history in our schools.

Having stated this in a general way, let us examine more closely the aims of historical study. They have been stated under a variety of headings, but broadly the following approaches will serve teachers.

There is the cultural. Aldous Huxley, commenting on Henry Ford's outburst that "History is bunk", gave it as his view that it was the annoyance of a man outside the cultural circle that exploded this remark. A knowledge of how things happened, of the world's great men and women, of the great achievements of different civilisations, these are part of the world's culture and the culture of educated persons.

Then there is the scientific approach. The facts of the past must be ascertained and weighed and the right conclusion made. It is for example, remarkable how different people have turned to the period of the middle ages in Europe and have read into that period different conclusions as to what was the basis of a happy society. Thus for example, thirty years ago, Guild Socialism inspired the politico-economic version of Fascism and yet attracted, at the same time, the enemies of capitalism, such as the late Professor Tawney, and the enemies of the overgrown industrial state of Hilaire Belloc and Chesterton.

Many teachers would stress this aim to study history as a science and not as merely the narration of events They would agree with the historian Bury when he declares "History must be studied as if it had no reference to anything but itself". They demand from their pupils a critical approach in ascertaining facts, in the formation of judgement and in the conclusions to be drawn from them. Their teaching for example will include exercises in historical research. Everyone would agree that this is an important aim for the more intellectual and older student. But is it the method we should use for the younger and average pupil, the pupil in our secondary school?

I am going to suggest for such a pupil a practical or realistic approach although it will involve for the teacher the philosophical outlook as well. Indeed it is an old approach. It has been suggested that the renewed interest in the study of the classical past and of Latin and Greek manuscripts, in the 14th and 15th centuries, in Italy, lay in the controversy between rival cities in that country. Scholars tried to find in the life of classical Greece and Rome, facts and interpretations with which to confound their rivals. Ricardo's economic theories were framed at the time of the dispute over the corn laws in England, at the beginning of the 19th Century.

It is to the interest of the pupil in his environment to which the teacher must turn to give a realistic approach to the study of history. At the same time, the teacher can through the same approach interpret the historical process, the significantly related sequence of cause and effect which is the true interpretation of history. Unrelated events have no meaning, but events of the past which have a related sequence help to explain our present world.

Pupils understand and are interested in their immediate needs of food, shelter, clothes, transport and so on, and if by seizing on this interest, they are carried to the past and follow through a line of development, then they are both interested and acquire the historical sense. Before enlarging on this teaching approach, we need a re-appraisal of other, older, methods of teaching history.

1. There is the history taught as great events turning round the lives of great men.

2. There is the history dealing with all the happenings of the past in any one era, or the reign of one monarch.

3. There is the history which largely confines itself to any one country, and to events in other countries only in so far as they impinge on the home country.

These methods have the attraction of simplicity, but they have great dangers.

1. Many children are moved by great and heroic figures. But teaching history round such lives only, will lose sight of great world developments and forces and over-simplify world events. In any case, the story of great men can be studied in great litera-

ture and can be introduced into any history course in the right context.

2. If history is taught in periods, then many events have to be included which are difficult to correlate and moreover, many happenings have little interest to young people. There is also the great probability that the pupil will never complete the whole course in his school life, or will be absent from intermediate periods. Therefore, history as a continuous development is not understood and very little of real value is left in the mind of the pupil.

3. Again, history that deals with one country only is meaningless in trying to understand the world to-day.

The new approach, if we drop the study of history in periods, must follow a line of development along a narrower path. If the path is narrower, the way is simpler, the pupil gets somewhere, and will not easily forget his journey. Moreover, he is interested from the very beginning. I have mentioned the obvious topics of food, transport, tools, clothes, shelter. As the pupil grows up, the development of ideas such as government and so on, may take the place of the history of things. What is important is to take a subject that the pupil is interested in, and deal with it in language that the pupils understand. Many young teachers, full of their own studies and university courses, teach topics that are above the heads of their pupils and in language that echoes their university teaching.

Moreover a good teacher, or the writer of the newer text-book using this method will take a topic, which, in following its line of development will deal with many significant events in history with which he should make his pupils acquainted, and not only significant events, but significant great lives. In this way, the significant in history, as the teacher knows it, is assimilated naturally by the pupil. The line of development is flexible and from the main line, one can easily branch off into projects linking with other subjects of the curriculum. Social studies, biography, can all be included. It is a natural method for a pupil to follow.

Of course, to this departure from the old established methods there are objections. We can deal with some of them.

(i) Pupils may be unaware of parallel events because of the narrow path that is followed. Under the old period system, pupils did at least have a sense of relationship of events in any one period, say the reign of one sovereign. Time charts and references to other topics followed in previous courses will provide the pegs on which to fix the chronology of events. This will gradually build up to an ultimate synthesis of different lines of development.

(ii) There are no suitable books. I think this is being remedied and I think an interested teacher can build up such a course by the use of older books, encyclopaedias, reproductions of old pictures and the daily newspaper.

(iii) The greatest objection is that such teaching will break down for older pupils because of the demands of the School Certificate Examination, since the line of development method tends to leave out constitutional and political history. To meet this objection, it has been suggested that the first three years should follow "lines" and the last two would concentrate on the ordinary course. A pupil who has intelligently followed the "lines" will very probably make a better history student.

Alternatively, a pupil, instead of political history, could offer economic history which lends itself better to this method of teaching. Or else a special syllabus in the School Certificate Examination could be offered based on line of development teaching, but that will come only if there is enough demand from a number of schools.

But for all pupils in the secondary school, using the new approach will make history a subject of immediate and real interest; for the average pupil it will be the basis of abiding interest, and for the more intellectual, it will be the basis, on which, more surely, academic and specialist studies can be built.

BIBLIOGRAPHY

Jeffreys, M. V. C., *History in Schools*, Pitman.
Rowse, A. L., *The Use of History*, English University Press.
Beales, A. C. F., *A Guide to the Teaching of History in Schools*, University of London Press.
Reeve, J. R., *History Through Familiar Things*, University of London Press.
This Changing Age, University of London Press.
The Craftsman and the Machine, University of London Press.
Quennell, *Everyday Things in England*, Batsford.
Gibberd, *The People's Government*, Dent.
King-Hall, *Tracing History Backwards*.

TEACHING OF GEOGRAPHY IN SECONDARY SCHOOLS

by J. C. Parrack

MR. J. C. PARRACK *who discusses here the Teaching of Geography in Secondary Schools specialized in the subject in the University of London. He is a teacher of geography of ripe experience and has taught the subject for several years and has been the Head of the Geography Department of the Leek High School, England since 1934. He is an elected Fellow of the Royal Geographical Society and author of a number of articles on the subject published in professional journals.*

The author indicates here the main trends in the modern teaching of geography in secondary schools as a contribution not merely to academic success, but to the true education of our pupils who will shortly become, like those who have preceded them, citizens of their own country and the world. Although understanding of the problems of our fellowmen does not guarantee sympathy with them, true sympathy is impossible without understanding. To help to build up such understanding is one of the main tasks of the geography teacher.

Mr. Parrack stresses that since the home district wherever it may be, provides the factual material for studying at least some of the fundamental relationships with which geography is concerned, it should form the starting point of the course in geography and should provide a standard of reference at all stages. The author examines the strengths and limitations of the 'regional' approach and the 'concentric' plan and prefers the former for the effective teaching of geography in secondary schools. He discusses in the context of the regional approach teaching methods in general, equipment and classroom techniques and activities outside school as visits to factories and farms, school journeys and exchange of pupils between schools in different localities.

"THE importance of geography as a vital element in education is now fully recognised by enlightened opinion so that it may truly be said that no secondary school course can be regarded as complete or properly balanced unless adequate provision is made for the study of the subject up to the normal school leaving age."*

The indispensability of geography as a secondary school subject lies in the essential contributions it makes towards the pupil's understanding of the effects of environmental factors, and of human responses thereto, on the development of and intercourse between the several parts of the world.

---

* A. A. M. Geography Committee *The Teaching of Geography in Secondary Schools*, 4th Edn., George Philip, 1955.

THE SECONDARY SCHOOL COURSE

It is assumed in this article that the secondary stage of education begins at the age of 11 or 12 years and is continued up to the age of 15 or 16 years, though a number of pupils in certain types of secondary schools remain for a further two or three years to carry out more advanced studies. The duration of the secondary school course may thus be anything from four to eight years, and it is clear that there must be wide variations in both the breadth and the depth to which any subject can be studied. It is proposed here to concentrate on the main course pursued by the great majority of pupils who leave school at 15 or 16 years of age. The foundations of the advanced courses followed in the VIth Form or its equivalent are laid during this period. The VIth Form course in geography, as in other subjects, is taken by a relatively small number of intellectually more mature pupils, and teaching techniques can on this account be greatly modified. The pupils are expected to show considerable initiative and are encouraged to carry out their own research and to put forward their own conclusions and points of view. The ability to do this should develop naturally from the training given in the previous five years.

Whatever differences exist between the various attempts to define geography, there is general agreement on its underlying principles and philosophy. Whilst it makes use of facts derived from or shared with many other subjects—such as physics, biology, geology, history, economics—it uses them, in conjunction with existing spatial relationships on the globe, to build up the concept of the interaction between man and his environment which is the core of the subject.

It is possible to suggest only in very general terms what should be included in a secondary school geography syllabus. Since the home district. wherever it may be, provides factual material for studying at least some of the fundamental relationships with which geography is concerned, it should form the starting point of the course, and should provide a standard of reference at all stages. The natural sequel to this beginning is the extension of outlook from the home district to the homeland, so that pupils are led to realise that their own locality is but a part of a much larger unit, and are enabled to widen their geographical vocabulary beyond the limits imposed by experience only of the home district. Side by side with the need to know something of one's own country, however, is the equally important necessity to realise that, in its turn, it forms a part of the world. Thus some preliminary general study of the form and size of the earth, the distribution on its surface of lands and oceans and one's own position on it should be introduced at an early stage. This dual study of homeland and world could occupy the first year of the course.

The remaining three or four years of the course should be utilised to enable the pupils to gain some realisation and understanding of the geographical factors which influence—and are to an increasing extent influenced by—mankind, and to build up a reliable picture of their "neighbours" in the more important regions of the world. The main controversy as to how this may best be carried out is between those who prefer the "regional" approach and those who claim that the "concentric" plan is the more effective. It is probably true to say that the former is much more widely used, and more emphasis will be given to it here. It must be said, however, that the "concentric" plan,—in which each year's work is devoted to a selected aspect of geography, applied first to the home region and then extended to other parts of the world—is successfully used in many schools. It has the disadvantage, however, that the whole "personality" of a given region cannot be understood until the last stages of the course.

When the regional approach is used, each year of the course is devoted to the study of a continent or group of continents. Each of these is considered on the basis of regions determined by natural conditions—surface features, climate, soils, natural vegetation and resources—and on the kind and degree of development achieved by man. In this regional setting it is possible to see each of the environmental factors in proper perspective and to give proportionately more emphasis to any particular one when dealing with a region where it is of dominant importance. It is clearly impossible, however, to include a study—unless it be very superficial—of every region of every continent; and such superficial study cannot lead to the achievement of the aims which have been set out. It is necessary, therefore, that a selection of regions should be made so that each can be studied in sufficient detail to enable pupils to gain a real understanding of the geographical principles involved, and to acquire the ability to apply them more widely. An important proviso is that sufficient types of region should be studied to enable the world pattern of major regions to be grasped by the end of the course.

TEACHING METHODS IN GENERAL

The benefit derived from a study of the home district as an introduction to the geography course is due to the emphasis which it rightly places on the making and recording by the pupils themselves of their own observations of the various aspects of the area with which they are most familiar. They are thus enabled in due course to build up a picture of their own area with all the details they have observed fitted in and seen in their true significance and perspective. While the ability thus to synthesise a large number of apparently disconnected facts is one which gradually develops and is unlikely to mature until a later stage in the course, the atmosphere created will be one in which such development is encouraged even though it cannot be forced. The recording of information involves, besides written statements, tables and diagrams, the use of maps, most characteristic of the geographer's tools; and training in both making and reading maps is thus given right from the beginning of the course. The facts observed and recorded will vary widely from one district to another, according to its physical and human characteristics. Whatever the type of district, however, weather observations should be included, with the object of building up, over a period of years, a picture of the climate of the home area. Apart from this, the emphasis in rural areas is likely to be on local land forms and drainage patterns, together with their influence on the siting of settlements and of routes. Direct observation of such things is much more difficult in large urban areas, but here industrial and commercial factors can be more readily studied, and there is likely to be much more documentary evidence from which the evolution and growth of the town can be traced. In most districts, again, it is possible to collect specimens, whether geological, botanical or industrial. These, especially when labelled and arranged for display, help greatly in making the subject real and interesting.

Whilst the ideal would be to base the whole of this early part of the course on the direct observations of individual pupils or of small groups of pupils, limitations of time and the complications of a time-table which has to provide for many other subjects may render its full application impracticable. In this case resort must be had to pictures and maps, together with verbal (written or oral) description. Indeed, when the area studied extends beyond that which is easily accessible to the pupils, these sources of information become indispensable. If we accept that the sequence: observation, recording, synthesis, is that most likely to give our pupils the outlook desired, then means of applying it to regional study must be found. In this connection the use of "sample studies"—detailed studies, that is, of very small communities which may be taken as typical of the region in which they live—is proving valuable. The advantage of the sample study lies in the fact that it deals with an easily visualised group of real people, the details of whose environment and way of life can be conveyed by description, by pictures of many of its aspects and by large-scale maps on which, again, details can be shown which it would be impossible to represent on the usual type of atlas map. Perhaps the most difficult step is that from sample studies to generalisations about the whole of a region. There certainly are pitfalls here, and the utmost care must be taken to ensure that generalisation is not attempted from insufficient or untypical examples. Nevertheless, unless the knowledge gained is systematised it is liable to remain as a disconnected mass of details.

For pupils who are studying the subject over a five-year course, especially if there is an external examination at the end of it, it is the general experience that, once the foundations of this orderly process have been laid, sample studies—even if enough were available—have to give place to more general accounts of regions, though even here the pupils should be provided with the means and the opportunity of drawing their own conclusions from the facts instead of being presented with ready-made generalisations.

In determining the order in which regions should be studied it should be borne in mind that those in which the relationships between man and his physical surroundings are direct and straightforward are the easiest to grasp and should come early in the course. Complex industrialised regions belong to a late stage. Apart from this consideration, however, there should be, towards the end of the course, a return to the homeland for more systematic study and comparison with regions already studied.

EQUIPMENT AND CLASSROOM METHODS

It will have become apparent from what has been said that much equipment is needed to make geographical studies really effective. In addition to normal classroom equipment globes, maps—including large-scale maps of the home district, parts of the homeland and other selected areas, as well as wall-maps (and the means of suspending them)—wall charts, pictures for display and for projection, projection apparatus, weather and surveying instruments, modelling materials, specimens: all these are indispensable, and the list could be augmented with other items which are, to say the least, highly desirable. The nature of some of this equipment and the large amount of storage and/or display space needed for the remainder so that any part of it is ready to hand whenever it is required, presents an irrefutable case for the provision of a geography laboratory. It is only in a fully equipped specialist room that the full benefit of the subject can be made available to the pupils.

Throughout the course carefully selected pictures form a most important part of the geography teacher's equipment. They may be large poster-type pictures to hang up on the wall; or smaller ones, of approximately postcard size, on paper or card, to be projected by means of the episcope or studied by individual pupils. Of increasing importance are transparencies for projection. These include, for still pictures, the filmstrip on 35 mm. film, the 2-inch square lantern slide (both projected by means of the filmstrip projector), and the 3¼-inch square lantern slide (projected by the standard lantern or epidiascope). In addition, movie films, both silent and sound, are available, usually on 16 mm. film. Of all these the filmstrip now occupies the most important place. By means of it a large number of pictures in unbreakable form can be stored in a minimum of space, and there are now many very good filmstrips on the market at prices which enable most schools to build up their own libraries of them. Whatever method of projecting still pictures is used, however, it must be borne in mind that each picture is a subject for study and a basis for work, that the teacher should carefully select beforehand the pictures he is going to show, and that there will be time in a lesson period of $\frac{3}{4}$-hour to show not more than six or eight pictures (except, perhaps, when they are being used for revision purposes). Good ciné films can be a most valuable aid, but the proportion of those available which are good enough geographically for class time to be spent on them is, alas, very small.

For all pupils studying geography maps are essential, both as sources of information and for the purpose of making concise and accurate statements. The use of maps and globes in the early stages of the course has already been indicated. Large-scale maps continue to be needed, for example in connection with sample studies; and the homeland, as represented on the 1-inch map (or map on equivalent scale such as 1: 50,000), should be referred to during each year of the course. But as soon as it becomes necessary to visualise any country or region as a whole the atlas map must be called into use, and its value, as well as its very considerable limitations, must be realised. Wall maps, which are usually greatly enlarged versions of atlas maps, may also be used for this purpose, though there is, in fact, some disagreement concerning their general usefulness when the pupils have good atlases to refer to.

Complementary to these teaching aids and still unsurpassed for many purposes is the blackboard. In the hands of any capable teacher it is probably the most versatile piece of teaching equipment, on which a map or a lesson summary can be built up step by step; tables, diagrams or graphs can be rapidly drawn, or statements or questions written up.

To conclude this section, mention should be made of television and radio broadcast lessons. Where available both have the advantage of bringing into the classroom the most up-to-date material, excellently illustrated whether by booklets or on the screen. Their disadvantages are first that they dictate the course of lessons, which may not fit in with the teacher's overall plan; and secondly that they can take no account of pupil's reactions or of their differing speeds of comprehension or of working.

ACTIVITIES OUTSIDE THE CLASSROOM

It is probably unnecessary to stress the value of such activities as visits to factories or farms, more extended school journeys, or exchanges of pupils between schools in different localities. All these can be so organised as to widen the experience of pupils in directions which are especially appropriate to the stage of the course which they have reached. Most valuable too are links which may be formed between schools and merchant ships, such as have been organised for the past twenty years in Britain by the British Ship Adoption Society, and the somewhat similar though less personal links which the Association of Agriculture has made possible in recent years between schools and farms in several Commonwealth countries.

CONCLUSION

The aim of this brief account has been to indicate the main trends in the modern teaching of geography in secondary schools, as a contribution not merely to academic success but to the true education of our pupils who will shortly become, like those who have preceded them, citizens of their own country and of the world. Although understanding of the problems of our fellow men does not guarantee sympathy with them, true sympathy is impossible without understanding. To help to build up such understanding is one of the main tasks of the geography teacher, who should neglect no improvement in method which will facilitate its accomplishment.

BIBLIOGRAPHY

The following publications should be consulted for amplification of the above article, and for further references.

I. A. A. M. Geography Committee, *The Teaching of Geography in Secondary Schools* 4th Edition, Philip, 1955.

Fairgrieve, J., *Geography in School*, 6th Edition, University of London Press, 1949.

Gopsill, G. H., *The Teaching of Geography*, Macmillan, 1955.

Geographical Handbook Committee, *A Geographer's Reference Book*, 1955.

Geography (The Quarterly Journal of the Geographical Association), contains numerous articles on all aspects of geography teaching.

Special publications of the Geographical Association:

Briault, E. H. W. & Shave D. W., *Geography in the Secondary School*, 1955.

Heaton, P. R., *The Geography Room in a Secondary School*, 1954.

Local Studies, 1949.

Handbook for Geography Teachers, edited by G. J. Cous, Methuen, 1955.

TEACHING OF SOCIAL STUDIES IN SECONDARY SCHOOLS

by Jack Allen

DR. JACK ALLEN, *the author of* Social Studies in Secondary Schools *is a Professor of History and the Head of the Department of History and Political Science in the George Peabody College for Teachers, Nashville, Tennessee, U.S.A. He has varied and rich experience in the field of social studies as a social studies teacher, a member of the Faculty of the Eastern Kentucky State Teachers' College, an author of school textbooks, workbooks, teacher's manuals and other teaching materials in social studies. He ably edited* The Teacher of the Social Studies, *the Twenty-third Yearbook of the National Council for Social Studies, U.S.A. (1952). He was also the President of the National Council for Social Studies, a department of the NEA. (1958).*

The author presents here a lucid picture of the concepts and programmes of social studies prevailing broadly in the elementary and secondary schools in U.S.A. His clarification that "the term 'Social Studies' does not refer to a particular form of curriculum organisation" and that it simply means "the use of social science materials for teaching purposes" would certainly interest those who are working to develop an integrated syllabus in social studies in India.

The author has emphasised three broad types of goals which should guide the organisation of students' learning experiences in social studies irrespective of subject topics and curriculum organisation. He categorises these goals as development of social understanding or social knowledge, citizenship skills and democratic attitudes. He has justified these goals on the basis of the perpetuation of a free democratic society.

The American schools are trying to achieve these goals through the use of a rich variety of instructional materials and methods. The author's brief references to the methods and aids used in the teaching of social studies are very much helpful in giving the reader a proper perspective to understand the social studies instructional programme in American schools.

IN the United States of America, a nation committed to the principles of human freedom and democratic responsibility, education assumes a central place in the life of the citizen. One of the essential components of the citizen's education is that area of the curriculum commonly referred to as the "Social Studies."

Social studies begins at the early levels of the elementary school and extends upward through the secondary school to the general education of the college student. Each of the social sciences —history, human geography, political sciences, economics, sociology, anthropology—has concepts to contribute to the social studies program. The manner in which the concepts are organized for teaching varies considerably from grade level to grade level. Since the educational system of the United States is decentralized, the organization of the curriculum also varies considerably from one part of the nation to another.

In this connection, it is important to keep in mind that the term "Social Studies" does not refer to a particular form of curriculum organization. It simply means the use of social science materials for teaching purposes. Thus, in the secondary school, social studies may refer to a course in American history or world geography or modern problems, or some other offering of equally dissimilar title.

Education for citizenship has deep roots in the American heritage. Elements can be found in the earliest colonial schools long years before the break with Great Britain. During the time the new American nation was being established on a firm basis there was much concern for the development of an educated voting citizenry. Among the subjects taught in early nineteenth century secondary schools were history, government and geography. As the United States moved into the twentieth century, the public secondary school burst into full flower. In this school, designed for all American students, social studies became at the outset one of the basic elements in the curriculum. For many years history dominated the social studies program. To a lesser degree it still does. It was during the 1920's that other social studies, such as community civics and problems of American democracy, began to vie with history for attention. Equally important, the history courses themselves began to break the shackles of a narrow political approach and take on a broader cultural orientation.

Because of variations in program from place to place, it is difficult to generalize about the pattern of social studies offerings in American secondary schools today. At the risk of oversimplication, the following course offerings appear to be the most characteristic at the different grade levels:

Grade 7—Human and physical geography;
Grade 8—United States history;
Grade 9—Community civics and citizenship;
Grade 10—World history;
Grade 11—United States history;
Grade 12—Modern problems.

It should be said at once that there is considerably less than general satisfaction with this sequence of offerings. It is a program that has not changed substantially for a generation. There is, as a consequence a growing dissatisfaction with certain elements. The dissatisfaction stems from a recognition of the profound changes occurring in human society, changes that need to be recognized and understood through the medium of a social studies program. It is entirely likely, then, that the next few years will witness alterations of some consequence in the existing pattern of course offerings.

Good social studies teaching, irrespective of course of titles and curriculum organization, gets its direction from three broad types of goals. One of these goals can be categorized as social understandings or social knowledge. A second is citizenship skills. A third is democratic attitudes.

The goal of social understanding seeks to provide students with more than a mere collection of unrelated facts—places, people, dates, episodes, etc. In broadest terms, this goal seeks to provide students with knowledge that will enable them to understand:

(i) the meaning of political citizenship in a democracy;
(ii) the nature of economic life in a free society;
(iii) the problems of intercultural and intergroup relations in a complex civilization;
(iv) the problems of peace and survival in an interrelated but divided world;
(v) the nature of human personality in relation to contemporary culture.

In addition to understanding, the effective citizen needs social skills, the ability to deal adequately with the people and ideas with which he comes in contact. Like other types of skills, social skills must be taught and practised to be learned. From skills instruction in the social studies, students should develop an increased ability to:

(i) think critically about controversial social issues;

(ii) gather, organize, and evaluate information relating to various aspects of social living;

(iii) obtain ideas from social studies materials through reading and listening;

(iv) write and speak effectively in discussions of social issues;

(v) interpret maps and globes;

(vi) interpret social studies materials presented in graphic forms;

(vii) sense historical matters relating to time and to chronology and

(viii) participate in various types of group undertakings.

The perpetuation of a free democratic society depends on proper attitudes, as well as adequate understandings and skills. In the area of attitudes, the social studies program seeks to produce in American youth, an appreciation of:

(i) the responsibilities, as well as the rights, of democratic citizenship;

(ii) the unique character and worth of every individual and every culture;

(iii) the interdependence of human existence;

(iv) the need for co-operative action in the interest of human betterment and

(v) the values derived from feelings of self-reliance and self-respect.

In effective classrooms, these three kinds of broad goals are particularized in countless ways through the use of many types of teaching methods and a variety of instructional materials. In this process nothing looms of greater importance than reading. There is the textbook. But there is apt to be much more. Students are expected and encouraged to read other books, current newspapers and magazines and, in fact, any type of printed material that may shed light on the topic being studied. Furthermore, an effort is made to read materials presenting different points of view in the interest of developing the ability to think critically.

Increasingly American schools are being provided with a wide variety of visual materials. These would include motion pictures, filmstrips, slides, maps, charts, and the like. In addition, students are encouraged to develop their own visual materials in the classroom, such materials as charts, maps, and picture collections. Auditory resources, such as record players and tape recorders, are likewise coming increasingly into use. One of the most rapidly growing developments of all is educational television. A considerable number of secondary school social studies classes are already making use of this new medium, and there is every reason to anticipate rapid growth.

The local community is still another much used resource in social studies teaching. The use of community resources is actually a two-way street. It can involve sending students into the community or, by contrast, bringing the community to the classroom. Thus, an entire class may go on a field trip or a small group of students make a social survey. Then again a local citizen may visit a class for some special purpose.

With many types of learning resources at hand, it becomes increasingly clear that the teacher's role is that of director of learning. It is in reality an expanding rather than a diminishing role, for the teacher must not only know the subject matter involved in the course being taught but also the nature of the adolescents whose learning he is seeking to direct and the resources that are to be employed in the process.

Finally, the teacher must bring the process of evaluation into play, for evaluation is the very heart of the learning situation. Adequate evaluation includes the more informal and subjective types of observation of students' behavior on a somewhat continuous basis, as well as the more usual kinds of measurements through testing. And, in view of the broadening concept of goals, even measurement is taking new forms. Instead of simple testing for facts, the measurement of understandings is called for. Skills likewise must be measured, and inventories of attitudes also made.

The true measure of effective social studies teaching is changed behavior on the part of students. A democratic nation must necessarily have an informed and effective citizenry, people committed to the ideals of human freedom. It is the job of social studies teaching to help keep such a tradition alive and growing.

RECENT TRENDS IN THE TEACHING OF MATHEMATICS IN SECONDARY SCHOOLS

by Claude H. Brown

DR. CLAUDE H. BROWN *who discusses here the Recent Trends in the Teaching of Mathematics in Secondary Schools has a long record of work in the field. Dr. Brown worked till 1948 as a teacher of mathematics in public schools of Kansas. Afterwards he was an Assistant Instructor in Mathematics in the University of Kansas, later Supervisor of Student Teaching in Mathematics in the Western Illinois State College, Macomb and then he worked as Associate Professor of Mathematics in the Central Missouri State College, Warrensburg. From 1948 onwards, Dr. Brown has been the Professor of Mathematics and Chairman of the Division of Science and Mathematics of the same college. He is the author of* The Teaching of Secondary Mathematics *and several articles on the subject published in professional journals.*

Dr. Brown discusses the problem of teaching of mathematics with reference to the secondary schools in the U.S.A. The most significant factor affecting the present teaching of the subject is the explosive development of mathematical theory in recent times which is reflected in a rapid expansion in school enrolments in mathematics and in the intensive studies of mathematics teaching in all its aspects—content, organization, method and objectives.

The discussion of teaching mathematics covers not only that in the traditional four-year high school course, but also the two years immediately preceding entrance to it and the first two years of the American four-year undergraduate course. The author details here the recent expansion of the number of courses in mathematics offered, the extensive revision of the content of secondary mathematics courses and the intensive study and experimentation with new teaching methods. These in turn have led to the revision of textbooks in the subject which have had the happy effect of heightening the student's interest in mathematics, and of increasing his appreciation of the power and ability of mathematical concepts and reducing the drudgery of repetitive drill on techniques and manipulations.

THE most significant factor affecting the teaching of mathematics in secondary schools at the present time is the explosive development of mathematical theory in recent times. This, together with the even more rapid expansion in the industrial and commercial applications of mathematics and the consequent demand for mathematically skilled personnel, is reflected in a rapid expansion in school enrolments in mathematics. The same factors have stimulated intensive studies of mathematics teaching in all its aspects—content, organization, method, and objectives. The effects of this heightened interest in mathematics and in mathematics teaching are not limited to any particular level of the schools but are felt at all levels from the lowest grades of the elementary school to the graduate schools of the universities.

The pressure for change in content and in method in mathematics teaching is felt most keenly at the secondary school level. On the one hand, it is being urged that secondary schools teach more advanced work so that their graduates may move more quickly into the more advanced and specialized fields of mathematics. On the other hand, the secondary schools of the United States of America are facing the problem of providing facilities and teachers for a vastly increased enrolment.

Since the term "secondary education" is interpreted in many different ways, it is desirable to define the sense in which it will be used in the discussion which follows. A national system of education falls naturally into three general divisions. For purposes of discussion, we may call these the elementary, secondary, and higher divisions. The elementary school has as its purpose the double objective of equipping its pupils with the tools for academic learning—the ability to read and to write and to perform the fundamental operations of arithmetic—and to acquaint them with the basic concepts, ideals, and traditions of their national culture. It is characterized by a relatively uniform curriculum and by instructional methods adapted to immature learners. Higher education is usually taken to refer to the more advanced and specialized instruction offered by universities and professional schools and designed for relatively mature students. The term *secondary school* refers, in general, to the educational program designed for the years between completion of the work of the elementary school and entrance into programs of higher education. It is sometimes, particularly in the United States, taken to refer specifically to the work of the four-year so-called high school. The work of the typical academic secondary school is largely preparatory, looking toward further schooling in some type of professional school. The work of trade and vocational schools, while secondary in the sense of coming after the work of the elementary schools, will not be considered in this discussion because these schools are largely terminal.

In a free society, individual freedom of choice of vocation is basic. This, in turn, implies opportunity for exploration of opportunities available and of individual aptitudes and interests. During his adolescent years, an individual is largely concerned with this type of exploratory experiences and, as his choice of a life goal begins to crystallize, with the academic preparation required for entrance into the intensive study needed to attain that goal. Hence the secondary school program is dominated by these exploratory and preparatory functions and any school principally concerned with these functions is, per se, a secondary school. It is, therefore, more realistic to consider the work of the two years immediately preceding entrance into the traditional four-year high school and the first two years of the American four-year undergraduate college course as part of the secondary school program than to restrict the term to the four-year high school course since the work done in these years is largely of the exploratory type which characterizes true secondary education. Therefore, in the discussion which follows, the term *secondary education* will be taken to mean this eight year period comprising, in American school, grades seven through fourteen and will refer to the education provided for students between the ages of twelve and twenty years.

The problems of secondary education in the United States are made more complex by the fact that the American secondary school is, like the elementary school, essentially a universal school attended by all youths in the appropriate age group. At the present time, between eighty and ninety percent of the population of the United States between the ages of twelve and eighteen is enrolled in secondary schools. Nearly forty percent of these continue on into the junior college years as the final two years of the secondary education program as outlined above are called. And, the number continuing their education into the junior college years and beyond is increasing rapidly.

The typical American secondary school is neither wholly a college preparatory school nor wholly a terminal trade or technical school. On the contrary, it usually attempts to discharge many of the functions of both. Hence, in discussing trends in the teaching of secondary mathematics, it is necessary to specify whether the program being considered is intended for all secondary students or for a group with specific aptitudes and interests. The discussion of secondary mathematics education herein will refer specifically to college preparatory programs.

In any mass undertaking such as American secondary education, the tendency to think in terms of the needs of the majority is almost irresistible. Where conrol of funds and, to a great extent, of program is left to the local community as it is in the United States, the pressure to concentrate on meeting the needs of the majority is overwhelming. Hence American secondary schools have received much severe criticism recently because American students have been found to compare unfavorably in academic achievement with students of the same age from other countries attending the highly selective university preparatory secondary schools common to those countries. This comparison has been particularly unfavorable with respect to achievement in science and mathematics.

An immediate consequence of the tremendously accelerated demand for mathematicians and scientists has been strong public pressure to strengthen and expand the secondary school mathematics and science program. This pressure has been met by

(i) expansion of the number of courses in mathematics and science offered,

(ii) extensive revision of the content of secondary mathematics and science courses, and

(iii) intensive study and experimentation with new teaching methods.

Since the great demand in industry and in research is for people with extensive training in mathematics, research and change in the field of college preparatory mathematics has been exceptionally active. It is possible, even probable, that eventually increased emphasis will be given to programs of instruction in mathematics for all students.

Traditionally, an American pupil in the seventh and eighth grades—i.e., ages twelve and thirteen—studied "arithmetic". This meant, actually, the applications of arthmetic to business such as the study of percents, interest, and profit and loss. The curriculum included some intuitive geometry and practice in the calculation of areas and volumes. In his fourteenth year, or in the ninth grade, he would probably begin the study of algebra. This would be followed by a year's work in Euclidean plane geometry and perhaps a half year each of solid geometry, advanced algebra, and possibly trigonometry. Those who went on to college took algebra, trigonometry, and analytic geometry the first year and differential and integral calculus the second year. Thus, the end of the secondary school years meant, at the maximum, completion of the study of calculus. Many students, however, did not progress beyond the one year of secondary school algebra.

The present trend is to begin the study of algebra in the seventh or eighth school year. Many four-year high schools now offer four years of mathematics instruction, culminating in a course which present the elements of analytic geometry and calculus. Engineering schools are now beginning to require entering students to be ready to begin the study of differential and integral calculus in their freshman year. This assumes that the student will have completed at least two years of algebra, plane and solid geometry, trigonometry, and analytic geometry during the traditional four-year high school course. It also means that the practice of offering four years of high school mathematics is becoming sufficiently wide-spread that the colleges no longer need to provide the courses preceding the calculus. However, this emphasis on mathematics is, so far, confined to college preparatory students and, among these, to those with a strong interest in, and aptitude for, science and engineering.

Parallel to the increase in mathematical offerings in the earlier years of the secondary school program is a movement to revise drastically the content of the traditional courses. If the study of algebra is begun in the seventh and eighth school years, time will be available in the traditional high school for beginning the study of such modern algebra concepts as sets, groups, and matrices. The course in Euclidean geometry is being revised so that plane and solid geometry can be combined into a one year course. Often the basic concepts of co-ordinate geometry and of modern synthetic geometry are integrated with the instruction in the traditional Euclidean geometry. The growing use of various types of mechanical and electronic computers is reflected in a lessened emphasis on logarithmic computation. Modern developments in business and governmental uses of statistical methods is reflected in the increased frequency with which units on statistical mathematics and on the mathematics of probability are found in secondary courses of study. There is also a strong trend in the direction of so-called "integrated" courses in which the traditional divisions of mathematical subject matter into algebra, geometry, trigonometry, analytic geometry, and calculus are being eliminated. It is becoming almost the universal practice to teach analytic geometry and calculus as one unified course and to teach integration and differentiation concurrently, bringing in the concepts of analytic geometry as they find application in the development of the calculus.

It is evident that such extensive revisions of course content as have been described have made the old textbooks and teaching methods obsolete. So, various groups, committees, governmental and private agencies, and individuals are actively engaged in developing suitable teaching methods and materials. The new textbooks being developed are intended to provide not only a synthesis of the traditional materials and the new consistent with the new concept of integrated courses but also to lend themselves to teaching methods which emphasize understanding of concepts and thought processes rather than manipulative skills. These changes have the happy effect of heightening the student's inerest in mathematics, and of increasing his appreciation of the power and utility of mathematical concepts at the same time that the drudgery of repetitive drill on techniques and manipulations is reduced.

To accomplish such a complete re-organization of subject matter and to extend the mathematics offerings of the secondary schools in the face of greatly increased enrolments makes unprecedented demands on the teaching staff. Sufficient numbers of mathematically trained personnel are simply not available to meet the demand for teachers and also the demand for trained personnel from industry and government. So, extensive research and experimentation on teaching methods adapted to teaching the new mathematics to large classes is under way. Attempts are being made to determine the extent to which television may be used in the teaching of mathematics. The possibilities of wider use of motion pictures, models, slide projectors and similar devices are being studied.

A limiting factor in any program for the expansion or improvement of instruction in mathematics, however, is the availability of competent teachers. The devices listed above can help the teacher to do more effective work and, perhaps, enable him to reach larger numbers of pupils. They cannot take the place of competent, dedicated teachers. So, not only must young teachers be trained but the older teachers must be given additional instruction in the new concepts now being introduced into the curriculum and in the new methods made necessary by new content, new organization, and the ever increasing enrolments. To meet this need, the work of the regular teacher training agencies is being supplemented by special summer institutes and so-called "In-service institutes" carried on during the school year. In these institutes, selected teachers are given a period of intensive instruction in the new materials and methods. These teachers, in turn, help their colleagues to master the new materials and teaching techniques.

Mathematics is truly an international discipline. The problems of mathematics instruction cut across political boundaries as surely as the new courses cut across the boundaries of traditional subject matter. Therefore, the problems and trends in secondary education in mathematics discussed above, while they apply directly to the teaching of the subject in American schools, are not unique in American education. The same general problems exist in all countries, differing only in detail. The rapid expansion of mathematical knowledge is not confined to any one country or region. The need for greater numbers of mathematically trained personnel to meet the demands of industry and teaching is not limited by geographical boundaries. Nor are the problems of revising the content and organization of secondary mathematics instruction and of developing teaching methods adapted to the new content or of providing teachers and facilities for a greatly increased enrolment peculiar to American education. On the contrary, we can expect the trends mentioned in connection with American education to affect curriculum content and teaching practice everywhere. And, even as there is no royal road to geometry, so there are no easy, universal solutions to these problems. Each country and culture must develop solutions to its problems in keeping with its needs, resources, and traditions. The task will not be easy. But, the hope of the future lies in the faith that man can, by using his powers of reason, find solutions to the problems confronting him. And, mathematics is, above all else, the subject which depends most upon the processes of reason.

BIBLIOGRAPHY

Allerton House Conference on Education, Study Group on Mathematics. *The Teaching of Mathematics in Illinois;* Report. (Urbana, Illinois, 1958.)

Brown, Kenneth E., "Mathematics in Public High Schools", Office of Education, United States Department of Health, Education, and Welfare, *Bulletin* 1953, No. 5, U.S. Government Printing Office, Washington, D.C., 1953.

Brumfield, Charles, "The Ball State Experimental Program in Geometry and Algebra", *Illinois Council of Teachers of Mathematics News Letter*, May, 1959.

Bureau of Secondary Curriculum Development. *Mathematics 10-11-12 : An Integrated Sequence For the Senior High School Grades.* Albany, New York, The State Education Department. 1959.

College Entrance Examination Board, Commission on Mathematics, *Program For College Preparatory Mathematics.* New York, 1959.

Illinois Curriculum Program, *Thinking In The Language Of Mathematics,* Springfield, Illinois, Office of the Superintendent of Public Instruction, April, 1959.

Keedy, M. L., "The University of Maryland Mathematics Project", *The American Mathematical Monthly,* January, 1959.

McCoy, M. Eleanor, "A Secondary School Mathematics Program", *The Bulletin of the National Association of Secondary-School Principals,* May, 1959.

The National Council of Teachers of Mathematics, Secondary-School Curriculum Committee, "The Secondary Mathematics Curriculum", *The Mathematics Teacher,* May, 1959.

Zant, James H., "Mathematics Curriculum Studies in Oklahoma", *The American Mathematical Monthly,* January, 1959.

Studies In Mathematics Education, Scott, Foresman, and Co., Chicago, Illinois, 1959. (A comprehensive listing of the various studies on mathematics education now in progress.)

TEACHING OF MATHEMATICS IN SECONDARY SCHOOLS

by K. R. Gunjikar

Prof. K. R. Gunjikar *the author of* Teaching of Mathematics in Secondary Schools *had a brilliant career as a student of mathematics in the University of Bombay and Cambridge. He is a mathematician of a high calibre and has worked as Professor of Mathematics for several years in the Elphinstone College and the Royal Institute of Science, Bombay.*

In this contribution, Prof. Gunjikar refers to some salient points about the content of the syllabus in mathematics and shows how the subject should be taught in secondary schools. He describes the weak spots of the teaching of mathematics at the primary stage and offers valuable suggestions which involve diagnosis of weak spots and provision of remedial measures for raising a satisfactory superstructure at the secondary stage on the weak and shaky foundation laid at the primary stage. The author examines the problem in both the lower secondary and higher secondary stages and illustrates his points of view in regard to arithmetic, algebra and geometry. Prof. Gunjikar feels that the syllabus in mathematics which was originally framed to suit the requirements of trade and commerce should now have its bias changed to enable the country to make quick and sound progress in our developmental plans. To him the matter of immediate concern is the provision of an adequate supply of teachers of mathematics whose quality needs considerable improvement.

In this atomic age and with multifarious plans for the rapid development of India on all fronts, it is no longer necessary to discuss at length whether or why mathematics should be included in the secondary school course. It is worthwhile, however, to consider the question of what the content of the syllabus should be and how it should be taught. A proper discussion of these points would fill volumes; and it is obviously out of the question to attempt to do so in this contribution. We shall be content therefore to refer only to a few salient points which merit consideration.

The secondary school stage is reached after about four years in the primary school. Teaching of mathematics in secondary schools has therefore to be considered in relation to the product of the primary school. Every pupil entering the secondary stage is expected to have mastered the four fundamental rules of arithmetic for integers (not exceeding one crore), and the usual operations on compound sums of money, measures of length, weight etc. He is expected to be able to tackle simple problems on direct proportion and to have some acquaintance with simple fractions like 1/2, 1/4, 1/12, 1/16 etc. (which are required in conversion of money); he should be able to write simple statements of accounts and to recognise simple geometrical figures.

These may be considered very modest requirements for a child who has had some four years of schooling, but unfortunately a large proportion of pupils entering the secondary stage are found to be very deficient in their mathematical equipment. What is worse, a good many of the children have apparently made up their minds that mathematics is a difficult subject meant only for the brilliant few and that they have little chance of completing their secondary course except by mugging up a few tricks and somehow scraping through the numerous internal and external examinations in mathematics which are unfortunately their lot.

One cannot expect to raise any satisfactory or lasting superstructure at the secondary stage on the obviously weak and shaky foundation laid at the primary stage. Before considering what shape this superstructure might take, it is therefore necessary to consider briefly why the foundation is weak and if any remedial measures could be taken to strengthen it to some extent.

One circumstance which merits consideration in this context is our old traditional practice of making the child learn by heart, at a very early stage, tables of multiplication—upto 10 or 12 times for integers from 1 to 30 or 40—and tables of quarters, halves, etc. up to 2½ or 3½ times for integers up to 100. The child had also to memorise various ad-hoc rules of computation, e.g. "the cost in rupees per maund is 2½ times the cost in annas per seer" etc. This was followed by a stiff course in arithmetic, with a profusion of unnatural and complicated problems, which gave full scope to the use of the various tables mastered mechanically in the beginning. In the old days this basic training probably suited most children who received it, as many of them could use it in practical life, in trade, shopkeeping, accounting etc. Learning by heart was also not considered any great hardship, as most children who attended primary school came from classes with a background favourable to such training and an attitude not averse to hard and mechanical work. Solution of unpractical or meaningless problems was in fact considered excellent mental discipline. But as education began to spread and reach children who were not fortunate enough to have such a background at home, the old methods became unsuitable. In the Departmental syllabus, memorising of all kinds of tables was placed at a discount and the contents of the courses were steadily curtailed. It was recommended that more stress should be placed on understanding than on memorising. But these obviously progressive measures did not lead to any great improvement in the general standard of mathematical education, probably because of the rapidly increasing numbers of pupils to be trained by insufficient numbers of ill-equipped teachers, who moreover had generally little faith in the new outlook. It is not necessary to elaborate the causes of the deterioration of the teaching of mathematics at the primary level. It may however be stated that the same handicaps are to be met with at the secondary stage. The number of pupils to be handled by a single teacher, who is often not properly equipped for the task, is disproportionately large. For any radical improvement of the situation, therefore, the first concern of the authorities should be to reduce the number of pupils under a teacher, and to provide larger numbers of properly educated and trained teachers. Apart from the question of resources, the time factor is against this. Large numbers of efficient teachers cannot be produced overnight, and it will probably be many years before any appreciable progress can be expected in this respect.

The very first item in the mathematical syllabus of the lower secondary stage (Vth standard), is revision of the work in the primary stage. Though the intention of this simple suggestion is undoubtedly sound, in my opinion something much more complex is necessary to undo the harm done at the primary stage. Rapid and indiscriminate revision of the primary course will have little effect on most pupils; it might even harden their antagonism towards mathematics. What is vitally necessary is proper diagnosis of the weak points of every pupil, carried out systematically but unobtrusively during the first months of the secondary stage.

Teachers must keep detailed records regarding the weaknesses of each child, and consider what types of remedial exercises will be necessary to overcome them, step by step. It is futile to expect quick success in the eradication of all the bad habits of commission and omission acquired by the child over a period of four years or more. The work would necessarily be slow but it should be deliberate so that the child acquires a proper understanding of the work done and replaces one by one all the wrong habits and hazy conceptions acquired by him, by sound ones. This must also be done unobtrusively, so as not to create a feeling of inferiority in his mind. The usual work of the fifth standard need not be held back till all the weaknesses are removed. Teaching must however be limited by the interests and experience of the child and a careful selection of the topics is necessary. It would be advisable to set the pupils to work on carefully selected projects in small groups in which even the weakest children can take some part suited to their abilities and designed to eradicate their weak points. The habit of relying on memory and learning of ad-hoc tricks for the solution of representative types has to be replaced by habits of understanding of basic principles and their application to situations, familiar or unfamiliar. The selected projects should have some real interest for the children, but should not involve lengthy calculations with large numbers. It should never be forgotten that mathematical principles can be more intelligently acquired, when the numerical calculations are fairly short and do not divert the attention from the main point to be learnt by the necessity to perform lengthy calculations. While the weaker children are given tasks for correcting their faults, the more mathematically minded children should be encouraged to tackle the harder parts of the project. The children will soon begin to see the necessity of a fair degree of speed in their work and so would be better able to learn the basic numerical tables by drilling from time to time.

If such work of "revision" and realignment is carried out systematically and intelligently in the fifth standard, the pupils' further progress will be sure and smooth. This does not mean that all children will be mathematicians, but that a large majority of them will be able to appreciate the role of mathematics in modern civilised life and will be anxious to learn the new "language" which will enable them to take a living interest in the world around. Incidentally this means that the teaching of mathematics in Standard V should not be left to the mathematically weak teachers, but should be undertaken by fairly competent and mature teachers.

Without going into detail, we may briefly consider next the main features of the syllabi of the lower secondary school, i.e. Stds. V, VI, and VII. The Departmental syllabus has the appearance of a collection of various loosely connected topics. This is perhaps due to the absence of proper guidance on the way it is to be handled by teachers and text-book writers. A properly thought-out hand book is absolutely necessary. In its absence, text-book writers make the various chapters correspond to the different paragraphs of the syllabus, thus isolating the different topics from one another; and as a rule teachers blindly follow the prescribed books, chapter by chapter. It is educationally sound to prepare children in advance for new topics or techniques to be introduced later, so that they might appreciate the new methods: coming events should cast their shadows before. It is necessary to bear this in mind when projects are set, e.g. before introducing children to "averages" children might be set to find out in what way or measure their group differs from other groups, in say height, weight, success in examinations or games etc. This would lead them naturally to appreciate the statistical concept of average, and make it real and interesting to them. In most text-books unreal or uninteresting problems are explained which may be of little use to the children then or later. It may be suggested in passing that by asking suggestive questions children may be led to appreciate the ideas of "deviation", "scatter", "correlation" etc. which are slowly but surely finding their way into our culture. Simple statistical notions will have to be added to the syllabi of the secondary school before long.

Another illustration might be given: children are usually taught "factorisation and divisibility of numbers", G.C.M., L.C.M. etc. in great detail before being introduced to fractions. It would create and maintain greater interest if these concepts are introduced when their utility becomes obvious to the children in dealing with fractions. It is also not necessary to labour them to unnatural lengths as is done in the usual text-books.

It is customary to introduce algebra in standard VIII as a separate subject as if it has nothing to do with arithmetic. This is unsound. Use of symbols for mathematical quantities, and simple manipulations with them should find a place in arithmetic very early. This would give the children a familiarity with the algebra of positive numbers which is very helpful in the understanding of arithmetical principles and the solution of problems. Further when they start learning the more generalised algebra there will be fewer new ideas to learn and a better appreciation of the generalisation introduced.

In the teaching of geometry in the lower secondary school only verification methods are expected to be used and any kind of deduction, however simple, is taboo. This is wrong. No doubt, at that stage, a rigid theoretical treatment is out of the question. But children should be encouraged to make some use of deduction suited to their maturity, e.g. the equality of vertically opposite angles may be verified in some cases; but it should very soon be followed by questions which would bring out the theoretical necessity of the conclusion and make the children aware of the power and beauty of the method of deduction, and anxious to take up the study of theoretical geometry at a suitable stage. There is plenty of scope for the use of rudimentary deduction, if use is made of the principle of symmetry with an introduction to the elementary properties of the circle. The present attitude creates an unnecessary fear in the minds of children against the solution of even the simplest of riders, and leads them to try and memorise theorems when they study geometry systematically later on. There is also scope for simple deduction in suitably framed problems of construction from a very early stage.

One other remark which may be made regarding our mathematical syllabi is that they appear to be framed more to suit the requirements of trade, commerce, shopkeeping etc. than for use in application to science. Considering the modern trends, it is very necessary to change this bias to enable the country to make quick and sound progress in our development plans.

Regarding the higher secondary stage, one might say that in our attempt to keep the goats and sheep together, we do considerable injustice to the abler pupils, without benefiting the weaker pupils appreciably. It is desirable to provide two sets of courses, one to suit the requirements and abilities of the weaker children, and the other for the benefit of the abler children. At present, the latter are kept busy with trivial and unimportant studies, which lead to a great waste of time and energy. By suitable trimming and adjustment both the sets of courses can be made more useful to both the streams of pupils.

I have not been able to touch on one very important aspect of mathematical education, viz. the problem of examinations. It is not because I consider it of little importance, but only because it is too vast to fit into the confines of a short article.

Before concluding, I may again revert to the somewhat pessimistic remark, that in the absence of a sufficient number of properly qualified teachers to tackle the large and growing number of pupils, progress is likely to be much slower than we should like. There is however a greater possibility of some advance, if we recognise this handicap, and devise suitable methods to minimise its effects.

GENERAL SCIENCE EDUCATION IN SECONDARY SCHOOLS

by R. H. Dave

MR. R. H. DAVE, *the author of* General Science Education in Secondary Schools, *is at present an Evaluation Officer in the Examination Unit of the Directorate of Extension Programmes for Secondary Education, Ministry of Education, Government of India. Shri Dave worked for some time as a Principal of one of the leading secondary schools in Ahmedabad and also as the Assistant Co-ordinator in the Department of Extension Services of the A.G. Teachers' College, Ahmedabad. He is one of the educators who received specialised training in the use of evaluation techniques under Dr. Benjamin Bloom, the Chicago Examination Expert, both at Chicago University in U.S.A. and in India, under the Examination Reform Programme of the Government of India.*

In this paper, Mr. Dave examines critically the present practices in the teaching of general science in different States of India and makes a plea for developing a fluid and functional syllabus in general science which could make possible the integrated approach of teaching it. As a pre-requisite for the adoption of this new approach, he suggests the clear and precise formulation of specific objectives of teaching general science at the secondary stage and also indicates their broad categorisation. His stress on the development in pupils of understanding of functional information and of practical skills, inculcation of scientific attitude and creation of interest in scientific activities is timely. Mr. Dave discusses at length the methods, techniques and tools to realize these vital objectives of teaching general science in our secondary schools. He aptly concludes his paper by indicating directions for better appraisal of pupil achievement in general science.

AT no time in the history of mankind such a phenomenal advancement in the field of science has taken place as it has happened during the past one hundred years. Although the previous accomplishments did set a stage for the modern developments, the discoveries and inventions that came about during the period resulted in a chain reaction, as it were, one leading to a number of others. Another important feature of the modern development in science is its all-sided development. Not that the inanimate areas of science like physics and chemistry were the only fields of exploration, but biological science also made an unprecedented headway. New branches of science have come into being and the boundaries of the existing branches had to be revised as a result of the all round development of science.

But what is more remarkable is that the modern science has proved so useful to the common man in his everyday life that it soon became socialized. The physical sciences have added new dimensions to commerce and industries increasing the capacity of production beyond imagination. The new means of conveyance and tele-communication has revolutionised social, economic and political life of the people. Various electrical industries and appliances have changed the mode of living of the people. It is rightly observed in the *Forty-sixth Yearbook* of the United States National Society for the Study of Education that "not only health knowledge but other kinds of science are rapidly becoming elements of social respectability. No vocation or no avocation is devoid of some contact with the achievement or methods of modern science. The entire world of which we are part, its forces, materials and never-ending changes, the daily press, magazines, common conversation, indeed all our contacts seem shot through with one or more aspects of science. Even those people who incline toward minimizing the contributions of science use them in their own lives."

PREPARING NON-SPECIALISTS IN SCIENCE

Such a tremendous impact of modern science on the personal as well as social life of the people has two important implications in education. One implication is to prepare specialists in various branches of science to feed industries and research centres with technical personnel for both production as well as perfection of scientific instruments and day-to-day appliances which are being increasingly used all over the world. The other implication is to educate the common man to make him a prudent consumer of scientific accomplishments so that his life may become fuller, richer and more comfortable.

The function of producting science specialists caught the imagination of educationists first, in all the advanced countries.

But soon it was realized that the task of producing prudent consumers of scientific means and methods was also equally, if not more, important. As stated in the report of the Secondary Education Commission (1952-53), "an understanding and appreciation of the fundamental principles of natural and physical science is essential to effective living in the world of today". It is mainly for this purpose that general science holds a place in the school curriculum. The subject of general science is designed to prepare 'non-specialists' in science by equipping them with functional knowledge, skills and qualities, although general science indirectly provides a background for specialized pursuits in various fields of science.

It was Julian Huxley of England who was among the pioneers to realize, in the latter half of the nineteenth century, the need of general education in science for every enlightened person. Since then, the subject has attracted the attention of educationists of different countries in varying degrees. The need for introducing general science in secondary schools was more keenly felt by countries like the U.K. and the U.S.A. where the application of scientific means and material became more extensive in the daily life of the people. In India too, some efforts were made by quite a few foresighted teachers and institutions in this field during the first half of the present century as is evident from certain literature available on the subject. But till the time it was given an official stamp as an essential subject in secondary school curriculum it had not ignited adequate interest in all the people who were concerned with the task of science education. Various suggestions were made by the Secondary Education Commission of 1952-53, headed by no less a scientist than Dr. Mudaliar, regarding the introduction of general science as a compulsory subject in middle schools and as a core in higher secondary schools. The suggestions inspired the Education Departments of almost all the states to give general science its legitimate place which was indeed long overdue in the school curriculum.

THE PRESENT POSITION

Practices differ from state to state in regard to the stage upto which General Science is recognized as a separate subject. In U.P., for example, the subject is taught generally upto the middle school stage only, while West Bengal has accepted it upto the penultimate class of a high school, presumably for staggering the number of subjects which a pupil has to offer at the public examination at the final year. In States like Bombay and Madras, it is recognized as a subject all throughout the secondary stage.

Despite all these efforts for vitalizing science education in India, the existing state of affairs is far from satisfactory. The instructional materials, methodology and such other specifics of general science education are still in a fluid condition and leave much to be desired. A close study of the syllabi in general science which are being practised in various states reveals that the concept of the subject is not adequately understood by many syllabus framers. For some states, general science means a conglomeration of physics, chemistry and biology, while for some others it embraces additional branches like astronomy, geology and agriculture. A few of the states have adopted an integrated approach following the draft syllabus of the All India Council for Secondary Education, particularly in their higher secondary schools. Even in their case, 'just' following the draft syllabus is likely to preclude them from giving a local colour to the syllabus to make it fully functional. The need to maintain the flexibility of the course content (which is the first prerequisite of a good syllabus of general science) to keep it dynamic and up-to-date is hardly taken into consideration. The same traditional methods which had proved unsuitable even for the specialized courses of science are by and large being adopted by teachers of general science. The concept of laboratory which requires a complete reorientation while introducing general science in the school system does not seem to have been caught. Suitable text-books, reference material and such other aids to the effective teaching of the subject still remain to be evolved. In short, the functional aspect of teaching general science in our schools does not stem from the existing syllabus, teaching techniques and such other equipments.

Above all is the preparedness of the teacher for the reform. The teacher has not been enabled to move with the change, the reasons for which are not unknown. An average science teacher who is expected to shoulder the first responsibility of accomplishing the purpose for which the subject is introduced has not yet experienced the thrill of the reform. He has yet to perceive clearly the concept of general science as a secondary school subject and its implications particularly in relation to the present set up of Indian society and growing industrialization of the country through our Five Year Plan periods.

On the other hand, even the most modern syllabi, text-books and other material aids of teaching the subject are being rapidly outdated by the quick developments in science ranging from intra-atomics to cosmic probes and from penicillin injections to plastic surgery. Such an unusual phenomenon exerts an ever-pressing demand on science teachers of today which calls for establishing a dynamic system in the teaching of general science in our secondary schools to meet the challenge of the times.

FIRST GEAR OF THE SYSTEM

The very first essential of successful teaching of general science, as of any other subject, is the clarity of purpose. General science can be broadly defined as 'everyday science for everybody'. Therefore, the kind of education to be imparted to the pupils with the instrumentality of this subject should be general, and useful to all of them. However, "General science may not be treated as synonymous with elementary science. While making the treatment of the subject more popular and less technical, it should not remain just elementary since it has to be functional and up-to-date. In fact, its scope and content would depend on the degree of complexity in the concerned society and the amount of science its people have absorbed in their day-to-day living."

In addition to the characteristics and functions of general science stated above, the stage at which the subject is taught, the age and abilities of the pupils studying at that stage, their previous background in science, the social structure, customs, traditions and beliefs of the society, the immediate as well as the remote needs of an individual in the society, and such other facts should be taken into consideration while formulating specific objectives of teaching the subject. As the teaching of general science constitutes an important part of General Education at the secondary level, the specific objectives of the former should be in harmony with the larger purposes of the latter. To the extent that these objectives are clearly formulated, the scope for successful teaching of the subject will be realised.

The broad categories in which the objectives may be classified are: functional information with understanding, functional skills, attitudes, interests and appreciation.

The pupil studying general science should acquire functional knowledge of science which is useful to him in his day-to-day life. However, mere acquisition of knowledge is no guarantee that the pupil will be able to apply his knowledge of science in understanding his environment more meaningfully and in resolving new and unfamiliar situations on his own. The development of this ability, therefore, becomes another fundamental objective which requires special efforts for its attainment.

The development of scientific skills is another important objective which assumes special significance in the age of science. Skill-objectives can be further categorized as experimental skills, constructional skills, expressional skills, etc. Under experimental skills may be included skills of handling apparatus, arranging the apparatus for experiments, taking readings and measurements with a fair degree of precision, maintaining and preserving instruments, physiological and biological specimens, chemicals, etc. The constructional skills may include the art of improvising certain simple appliances and making minor repairs to scientific instruments using the necessary gadgets. The scientific method of work and the power of observation are two other very important skills which cut across both the sub-categories mentioned above.

For a man of the modern age, it is also necessary to acquire skill in the presentation of data expressed in appropriate form such as pictorial, graphical, tabular or descriptive skill in oral expression using scientific terminology and so forth.

Certain skills which are being lost in the present generation such as estimation of weight, volume, temperature, speed, etc., also need an urgent revival. An intellectual skill like that of problem-solving cuts across a number of specific objectives and serves as an overall goal of teaching science.

The objective which perhaps claims the greatest emphasis is the inculcation of scientific attitudes. Mr. K. L. Compton in one of his articles says that 'Science is not a technique or a body of knowledge, though it uses both. It is rather an attitude of inquiry, of observation and reasoning with respect to the world'. Scientific attitude consists of a number of permanent qualities including 'Scientific method' which is not only a skill but also an attitude. Adoption of scientific method both in thinking as well as in action distinguishes a well-informed person in science from the one who is not so well-informed. Among other important qualities or attitudes which can be nurtured and nourished through the medium of general science are objectivity in judgment, intellectual honesty, openmindedness, tenacity of purpose and self-reliance.

Information of facts and formulæ fades away from memory in course of time. But attitudes, once developed, are likely to form a part of permanent and lasting education. Thus, the importance of this objective of teaching general science cannot be overemphasized.

Creating interest in pupils in various scientific areas and activities is another category of objectives at the secondary stage. As General Education in science contributes to the preparation for a fuller and more complete life, by implication, the process has to continue throughout life. Only a genuine and abiding interest created in the young folk can help them continue the process of self-education in the subject in their later life. Some of the worthwhile interests which could be created through general science education are interest in reading science literature in the form of books, magazines and newspaper articles, interest in collecting geological and other specimens, interest in repairing and improving scientific appliances, interest in nature rambles and sky observations, and interest in current developments in science.

The impact of recent developments in science has given a new outlook to the personal as well as social life of people. Newer and newer forces of science emerge periodically and influence the common man to appreciate both the past as well as the recent trends in science and weigh them in terms of social welfare. The proper mental equipment is necessary to appreciate the control acquired by mankind over numerous natural forces, variety and vastness of nature, struggles much by various scientists and inventors in making triumphant innovations and so on.

The above are the broad categories of objectives of teaching general science in secondary schools. Now it should be upto the teacher to evolve a set of clearly and fully stated objectives to suit the specific needs of his pupils, select the most crucial and attainable objectives for a year, and decide upon the emphasis and priorities among the selected objectives.

History of science education in advanced countries reveals that for a calculated move towards improved science teaching, the question of priorities assumes a great significance. The time is now ripe to study the problem of attaching priorities to a few objectives of teaching science the attainment of which is very urgent in the first phase of development. Once the atmosphere is created, other objectives will take shape rather more rapidly and with comparatively less effort.

LOCATING EXPECTED CHANGES

After selecting the worthwhile objectives of teaching general science for a particular grade, the next step is to consider the means and methods of ascertaining those objectives.

It is a well known fact that teaching becomes successful to the extent that the desired learning takes place out of the effort. Any kind of learning is of no avail. Formal education is a process of modifying the educand's behaviour in the desired directions. It is therefore necessary for the teacher to specify each of his objectives in terms of behaviour changes expected in pupils. For example, when pupils acquire knowledge of scientific terms, concepts, facts, principles and processes, they should be able to

(i) recognize these terms, principles, etc.;
(ii) distinguish between closely related concepts;
(iii) cite suitable examples of facts and phenomena;
(iv) classify specimens, illustrations, properties, etc. according to given conditions;
(v) make simple calculations based on scientific relationships; etc.

Similarly, the pupils who are enabled to apply scientific knowledge should be able to

(i) explain scientific phenomena giving reasons;
(ii) make predictions;
(iii) plan for a new experiment;

(iv) suggest alternative methods of a given experiment;
(v) make plans for improving scientific instruments and appliances;
(vi) select appropriate means to accomplish a given purpose;
(vii) detect errors and suggest remedies etc.

The anticipated learning outcomes, such as those illustrated above, in respect of each objective will become helpful to the teacher both in devising appropriate learning experiences and also in evaluating pupil achievement in terms of expected changes.

RELATING TEACHING TO OBJECTIVES

The process of clarifying objectives builds the foundation on which the educational structure is to be based. Therefore, a conscious and vigilant effort is necessary on the part of teachers to relate teaching and learning procedures to the objectives. While dealing with a particular unit of teaching, the selection of teaching methods, learning situation, reading material, equipment and illustration, etc. should be made in complete relevance with the objectives under attainment.

The process of effecting desired learning in pupils is quite complex. The kind of learning that takes place in pupils largely depends upon the kind of experiences to which the pupils are exposed. A variety of experiences can be provided to them by suitably organising pupil-activities. Reading, writing, drawing diagrams, observing an experiment, discussing experimental results, debating scientific reasons, taking temperature readings, maintaining an aquarium, improving an instrument, and a host of such others are all pupil-activities. Analysis of these activities in terms of learning outcomes, reveals that different activities provide different kinds and quality of learning experiences to pupils resulting in corresponding learning outcomes. Besides, certain activities like performing an experiment or observing a demonstration provide vivid and lasting experiences than simply reading or listening about the experiment. Hence, it becomes necessary for the teacher to select appropriate activities utilizing the objectives of teaching to guide him so that the desired learning takes place. For instance, activities like listening to a lecture and reading a text-book or a magazine article are appropriate activities for collecting information on a given topic, but they will not help pupils to develop, say skill in manipulating with science apparatus. For that skill to develop, activities like laboratory experiments, try-outs of simple experiments at home with kitchen gadgets, science club activity and such others will be more appropriate. Moreover, information collected through the latter type of activities will be more clearly grasped.

Similar is the case with different teaching approaches or methods, as each method characterizes a set of sequentially organised activities. The demonstration method, if carefully employed, will help pupils develop power of observation, experimental attitudes, and knowledge of certain principles or properties. A discussion method, on the other hand, is likely to develop power of oral expression using scientific terms, analytical thinking and co-operative spirit. Questions like tenacity of purpose, self-reliance and inquisitiveness may be better developed by adopting the project method. Thus the adoption of different methods of teaching results in the accomplishment of different types of objectives of teaching. The teacher, has, therefore, to select the most suitable method or methods of teaching a particular unit in accordance with the objectives to be realised while dealing with that unit. He cannot aspire to realise all the worthwhile ends of teaching general science by continuously adopting one or two methods such as lecture method or demonstration method or even the experimental method.

In short, the learning activities that he desires to provide to pupils, the teaching approaches that he intends to adopt for providing those activities, the physical and human resources that he wishes to explore, in fact all the means and material that he chooses to provide effective learning experience to pupils should be closely geared to and validated against the predetermined objectives of teaching.

For example, while dealing with a unit like 'How do we get our drinking water?' with class IX pupils in a large city, if the objective is to provide information to pupils, the teacher may adopt measures such as telling them about the process of purification of water on a large scale and the method of water supply in the city. He may even ask pupils to read relevant sections of their text-books and answer certain questions. If time, and also his enthusiasm, permit he may invite the water-works engineer to talk to pupils on the topic. But if his objective is to develop power of observation along with the acquisition of first hand information about the topic with which every individual is vitally concerned, he may arrange a visit to the main water-works of the city, and also to the sub-stations.

Along with these, if he intends to aim at the development in his pupils the ability to apply the knowledge acquired by them, he may raise problems before the class such as the following:

(i) Why does the flow of water of a bath-room tap decrease when the water-tap in the kitchen is opened?

(Thinking process: Finding out scientific reasons to explain a given phenomenon).

(ii) How will you improvise a model showing that the distribution of water at the first floor is not affected by the water-taps at the ground floor: Suggest an alternative method also to the one that you discover.

(Thinking process: Making plans for improvisations).

(iii) Using your kitchen as a laboratory, how will you find out whether a given sample of potable water from a tap contains any soluble impurity?

(Thinking process: Planning for an experiment).

Such problems selected for classroom discussions or individual assignments are likely to direct pupils' outlook towards application of knowledge in everyday life-situations and develop in them the required abilities and mental skills for solving problems in the long run.

If the teacher has provision for science club activities, and if he wishes to develop certain constructional skills in some gifted children, he may allow the members concerned to undertake a project for the distribution of water with the help of glass-tubes and toy-taps.

It will thus be observed that it is the objective or a set of objectives which should guide the teaching and learning procedures to make teaching most effective and fruitful.

SHARPENING TEACHER'S TOOLS

For the successful accomplishment of the purpose of teaching General Science, it is absolutely essential at this stage to strengthen the hands of an *average* science teacher by sharpening his teaching tools. The desired goals can be reached only if the teacher is actively assisted by various agencies concerned with regard to the development of

(i) appropriate syllabi,
(ii) text-books,
(iii) other reference material for the use of both teachers as well as pupils,
(iv) laboratory equipments, and
(v) evaluation techniques and test material.

One of the most effective means which directs and assists the teacher in selecting and organising suitable learning experiences is the syllabus. As the subject of general science is expected to provide science education *for* life, it can be better provided only *through* life situations. Therefore, the syllabus should consist of problems confronted by the pupils in their everyday life, and should be stated in terms of integrated units of study. The units like, how do we tell our time?, electricity in everyday use, how do we light our homes and streets?, how does a human body maintain almost uniform temperature in normal conditions?, the ocean of air in which we live, the sun as a source of all energy, the bicycle I ride on, and a host of others will be more helpful to the teacher in stabilising that concept of general science in day-to-day teaching. The experience reveals that when a general science syllabus is stated in terms of formal disciplines such as physics, chemistry, biology, astronomy, geology, etc., few teachers can give a general science approach to teaching and in most cases the teaching of the subject loses its functional value because it lapses into the rigours of studying specialized branches of science. Thus an average science teacher fails to realize the difference between teaching general science and, say, physics.

Another important revelation from close scrutiny of the existing syllabi of general science followed in various States is that little heed seems to have been paid to the changing pattern of the society from the science point of view. To be fully functional, the syllabus has to remain dynamic and up-to-date, incorporating in it the most recent science problems of social significance. For instance, a number of new cloth fibres like artificial silk, rayon and nylon have come into use in everyday life of the people. Various articles of plastics have become quite common in urban and semi-urban areas. The grandfather pendulum clocks are being replaced by electric clocks. The electric bulbs are being fast substituted by tube lights and so forth. It is therefore necessary to relax the existing rigidity with regard to the syllabus and to create permissive atmosphere for teachers to think about the more effective science education of pupils in their charge. Free atmosphere created at the transitional stage in the teaching of general science will raise possibilities for the emergence of the syllabi having greater functional value.

Several other tools of teaching general science also need a great degree of refinement to suit the new concept of the subject. Preparation of suitable and well-illustrated text-books, publication of reference books specifically prepared for secondary school children in their regional languages, availability and use of periodical literature for locating most recent information on certain units of study are certain urgent needs. Serious consideration is necessary with regard to the equipment of laboratories suited to the requirements of teaching general science, acceptance of a botanical garden as an extension to a physical laboratory, establishment of a rich museum, aquarium and a zoo in the vicinity of schools and the availability of other teaching aids. Above all is the importance of human resources. While studying specialized branches of science, the availability of human resources was comparatively very limited. But the study of everyday science widens the scope of exploring human resources to a great extent. A physician, a sanitary inspector, technical personnel in charge of detecting adulteration of food or checking the potability of water, a watch-repairer, a gardener, a farmer, a grain merchant, a dry-cleaner, and a number of such professional people can now serve as extremely useful resource personnel. The teacher can strengthen his teaching programme by utilizing the services of such persons available in the vicinity of the school.

Research studies are necessary in refining some of the teaching tools and instructional material. Training colleges can play a very effective role in this regard. As for the publication of standard reading material and equipment of laboratories, Education Departments of States can actively assist schools and teachers to make the programme of teaching general science a success.

APPRAISAL OF OUTCOMES

There are two major implications of the improved teaching of general science to the procedures of appraising pupils' achievement. For maintaining the dynamic character of the subject, the examination will have to be decentralized. In a country having long traditions of centralized external examination, such a suggestion may not sound acceptable and practicable. Of course, an abrupt change in the system is bound to create severe motivational and other practical problems. Therefore, the shift towards localization of the evaluation procedures should be very gradual. It should be introduced only after experimenting with the techniques of internal evaluation and developing confidence in teachers for such a procedure after providing the necessary training to them.

Another important implication of the objective-centred teaching is to establish close correspondence between the objectives of teaching and examination. The present system of examination which places a large premium on memorization of facts has produced corroding effects on the teaching as well as learning procedures. The development of higher mental abilities, skills and attitudes which contribute to permanent learning has remained outside the classroom because pupil achievement in these areas is hardly appraised. It is therefore necessary to adopt, first of all, suitable methods of collecting evidences about pupil achievement in areas such as written, practical, observational, oral, etc. The selection of the suitable method or methods should be made in relation to the nature of objectives under testing. Secondly, the evaluation tools, which may be in the form of questions, check lists, observation sheets, etc. will have to be improved by basing them on various objectives of teaching and the behaviour changes expected thereof. The evaluation instruments should thus become valid, reliable and as objective as possible. In this respect also, the teacher will have to be equipped with not only the techniques of effective evaluation but also the necessary materials required for the purpose to which he may add his own contribution and use them. By using appropriate methods and materials of evaluation he should evolve a system to evaluate the practicality of predetermined objectives and effectiveness of the learning experiences provided to the pupils.

Pending various reforms in the present system of examination, which requires a co-ordinated effort of various agencies, the teacher may form a habit of continuous evaluation of the teaching techniques that he adopts, the learning activities that he provides to pupils, text-books and other equipment that he utilizes as aids, the reaction of pupils and their study-habits that he observes and so on. If he makes a conscious effort for improving learning experiences for pupils on the basis of such a qualitative though to a certain extent subjective data, a substantial rise in the standard of pupil achievement can be achieved. Evaluation may thus, be used as a lever to keep his methods of teaching, instructional material and teaching tools dynamic and ever growing, so that the specific objectives of teaching general science in our secondary schools may be ascertained with increased effectiveness.

BIBLIOGRAPHY

All-India Council for Secondary Education, *Proceedings of the All-India Seminar on the Teaching of Science in Secondary Schools,* New Delhi, DEPSE, 1956.

Blackwood, Paule, *Experiences in Science,* 2nd Edition, New York: Harcourt Brace and Company, 1955.

Bloom B. S., *Taxonomy of Educational Objectives,* New York, Longmans Green & Co., 1956.

Dave R. H. and Kulkarni D. G., *Evaluation in General Science,* New Delhi, DEPSE, Ministry of Education, 1960.

Eley, G. S. and others, *The Physical Science,* New York: Ginn & Co., 1954.

Furst, E. W., *Constructing Evaluation Instruments,* New York, Longmans Green & Co., 1958.

Mudaliar, A. L. (Chairman), *Report of the Secondary Education Commission,* (1952-53), New Delhi, Ministry of Education, 1956.

National Society for the Study of Education. *The Forty Sixth Year Book Part-I-Science Education in American Schools,* Chicago, The University of Chicago Press, U.S.A., 1947.

Neiss and others, *Modern Science Teaching,* New York, Macmillan and Co., 1955.

Tyler, Ralph W., *Basic Principles of Curriculum and Instruction,* Chicago, The University of Chicago Press, U.S.A., 1957.

THE TEACHING OF TECHNICAL SUBJECTS IN SECONDARY SCHOOLS

by H. R. Mills

THE *author of this paper, Professor H. R. Mills of the British Council has spent a good part of his teaching career in India. Between 1929 and 1946, he worked as Professor of Physics in Madras Christian College and as Principal of the Maharaja's College, Ernakulam, South India. He was for sometime the Scientific Adviser to the U.K. Government in South-East Asia under the Colombo Plan. He was also the Director of the Science Department of the British Council.*

The author has, in this paper, lucidly summarised the recent trends in the teaching of technical subjects in secondary schools. Elucidating the cultural value of technical subjects in secondary schools, the author has pressed his point that it is not the function of the secondary school 'to produce finished craftsmen, or even to give vocational training.' Technical subjects in secondary schools, the author rightly maintains, must be regarded as 'a valuable part of general education'. The functions of the modern technical secondary school should therefore be development of basic understanding, practical skills and good qualities of character. The author's views are in accord with the recommendations of the Indian Secondary Education Commission.

The author enjoins that the teaching of technical subjects in secondary schools should get directions in large cities from surveys of local occupations. One would agree with the author that the programme of technical training should be kept as broad and as general as possible to accommodate new skills demanded by the fast developing science and technology.

The author's pointed references to some of the vital aspects of the teaching of technical subjects, such as the training of the teachers of practical subjects, the equipment of the secondary school workshop, the need for relating pupils' work in the school to life around them, motivated examination, improved procedures of appraisal and reporting, the medium of instruction, new techniques of teaching and the last, but not the least, raising the status of teachers of practical subjects have practical significance for Indian teachers in the same context.

THE rapid advance of science in the past fifty years has made the civilised world completely dependent on science and technology for the continuation of its particular way of life and survival.

Science up to about 150 years ago was regarded as a rather harmless pastime for eccentric old gentlemen, but was not a serious matter for education or for teaching in schools.

The situation now is that no educational programme for schools can be satisfactory without science and technical subjects. We sometimes hear in educational discussions that a school, by introducing some practical science or a technical subject, is thereby giving a technical *bias* to its curriculum. The modern view is that any curriculum of secondary school which does *not* include a science or a practical subject is disastrously biased, and is ignoring the present needs of the community and the mainstream of contemporary human endeavour and culture.

Many countries, particularly those in south-east Asia, have not fully experienced the impact of the industrial revolution which in the West so profoundly changed attitudes to education in relation to manual work and craftsmanship. This revolution changed the social pattern of countries and created a great demand for technicians; but the technicians did not precede and create the revolution. Technical education in countries which are planning industrial development must organise its programme so that the trained craftsmen, technicians or technologists finally produced will be in demand and not left unemployed.

In the Crowther report, recently published (December 1959) by the U.K. Government, the following passage occurs which admirably illustrates the trend which has taken place in the attitude towards apprenticeship and craftsmanship.

> "Fifty or sixty years ago there was in most industries a clear-cut distinction between skilled and unskilled jobs. The former required considerable intelligence, a very high degree of training, highly efficient hand-eye co-ordination, and intuitive knowledge of the properties and behaviour of a limited number of types of fundamentally simple machines, together with literacy and an acquaintance with simple arithmetic. Now-a-days the situation is different. The skill which goes into a product has shifted from the workshop floor, to the preparatory stages and to the work done by technicians such as draughtsmen, development engineers, designers, metallurgists, works managers, esti-

mating clerks, quantity surveyors and so forth. These are now the real skilled occupations in modern industry."

THE IMPORTANCE OF TECHNICAL SUBJECTS

Many countries are faced with urgent calls for increased food production and economic stability, and it is realised that technical development is the only way to answer these calls. It is not easy for people whose outlook on the world took shape some twenty or thirty years ago to realise just how rapid the recent changes in outlook have been. It is even more difficult for them to realise the exciting challenge it now presents to those whose working lives will extend into the next century. Mention of two trends will emphasise this point.

The population of the world is at present increasing at the rate of at least 130,000 per day, while about half the world's inhabitants are at starvation level. This means that all men's ingenuity will be needed to meet the challenge of the increase in population.

Another problem is the uneven distribution of the world's power resources, a problem which must be solved by the international co-operation of technologists and technicians, and which is inseparable from the problem of feeding the world.

Technical education at all levels is an important part of economic development programmes, particularly those fostered by International Co-operation Schemes such as the Colombo Plan or the United Nations.

THE CULTURAL VALUE OF TECHNICAL SUBJECTS

One of the most important trends in secondary education is a new appreciation that technical subjects, properly taught and practised, are in themselves good cultural and educational subjects. Many boys learn better and develop character and personality by being given satisfying work to do with their hands. It is often difficult in a country which is not fully developed industrially to decide which technical subjects should be included in the secondary school curriculum, but the modern trend in secondary education seems to show that specialisation is unimportant at the secondary school stage. It is not the function of the secondary schools to produce finished craftsmen, or even to give vocational training. Technical subjects in secondary schools must be regarded as a valuable part of general education, and as a means of stimulating in, and preparing for, this technological age. They should impart some basic knowledge and practical skills, but they should also impart a training in qualities of character that are essential for living happily in a technological society.

Technical secondary schools should also enable the teacher to assess a boy's capacity or potential for a technical career.

DIVERSITY OF TECHNICAL SUBJECTS

Many secondary schools in the U.K. offer a wide variety of technical courses for boys and girls who remain at school after the age of fifteen. The subjects studied include motor engineering, horticulture, agriculture, furniture making, book-crafts, pre-nursing courses, home-crafts, commerce, building and art.

In large cities a survey of local occupations will give an indication of the pre-technical courses to follow.

It is nevertheless important to keep the programme of technical teaching as broad and as general as possible. The extension in mechanisation and automation necessitates the rapid learning of skills, but these skills quickly become outmoded with the ever-increasing pace of automation.

THE NEED FOR A NEW APPROACH

For many boys and girls in this present age, the motivation for their efforts in school does not come to them verbally, but through materials and machines. They are able to group ideas and formulate principles best through the work of their own hands. It is essential in a technological society for the people to understand the very basis of that society.

It is not merely a question of a new curriculum. The teaching of technical subjects must have a new approach, inspired by zeal for helping young people to make their full contribution to their own communities and to the technical age in which they live.

One of the present trends in teaching technical subjects in secondary schools is the effort made to overcome two generally recognised defects. One defect is that the practical content of general education is felt to be inadequate, and the other defect is that the cultural content of technical education is felt to be equally inadequate. These two defects have to be overcome in secondary schools.

THE TEACHER OF TEHNICAL SUBJECTS

One of the biggest problems facing educational administrators is the supply of trained teachers of technical subjects. We have seen that technical education does not consist merely in imparting skills and techniques, but it also involves training young people in qualities of character, in team work, reliability, sense of duty, loyalty, initiative, perseverance in the face of difficulties, and these qualities have to be developed by the technical teacher as a part of his job. Increased demand for technical training has caused educationalists to become more and more insistent on teachers' having a clear objective, not only for each of their lessons, but for the course as a whole.

Equipment: It must be made clear that a secondary school is really concerned with pre-technical education, and cannot, and should not, attempt to train a craftsman or a technician. For this reason it is important that workshops should be equipped with hand-tools only for boys up to the age of fifteen. Boys under proper supervision can be taught the use of power-driven machine tools, but only after the age of fifteen years, and then under skilled supervision.

IMAGINATION

An essential feature of a secondary school dealing with technical subjects, is the emphasis that should be placed on "learning by doing". In most subjects in a secondary school both talk and chalk are over-worked, and these can be disastrous partners in teaching technical subjects. Imagination on the part of the teachers of technical subjects must play an ever-increasing part in pre-technical education. Teachers must take every opportunity to relate their work in the school to the life going on around them. The pupils should be encouraged to make useful things, and to effect most of the repairs to apparatus, furniture, and equipment in their own school, and to derive satisfaction and pleasure from doing it.

The example of the teacher will play a paramount part in this, as in all aspects of secondary education.

EXAMINATION

There is a trend in technical schools doing technical subjects to have technical subjects fully recognised as subjects for examination, and not to regard them as optional or voluntary occupations.

Boys in most countries, particularly when they get a little older, are properly motivated by suitable examinations, leading to some kind of recognised qualification, but not necessarily for college or university entrance.

THE TASK OF THE TEACHER

The teacher of technical subjects has a responsible and important task. He has to stimulate an interest in science and practical subjects. He has to impart knowledge to his pupils, he has to develop their skill, to train their characters, and to assess their capabilities for future employment and advancement, so that they can be properly advised and guided on their future work. This work of assessment is done by regular and properly constructed tests and systematic reporting. The old type of written examination is found to be very unreliable for assessing academic or technical achievement. Progress in practical work can be assessed only by practical tests. Examination marks for examinations that have not been scientifically standardised have no absolute value whatever, and marks allocated are merely a convenient way of grading students in a particular batch or form. The pupil's grading in his batch is far more important than his actual marks.

LANGUAGE

In many countries of south-east Asia the practice is to teach technical subjects in secondary schools, as far as possible using the English language. This has many advantages, as English is now the scientific and technical language used all over the world, and it is also the commercial language most widely used.

Films, text-books, visual aids of all kinds, are generally readily available in English, and progress into higher studies and post-graduate work without a knowledge of English is severely handicapped.

AUDIO VISUAL AIDS

Secondary schools are making ever-increasing use of the new media such as films, radio, television and filmstrips. The technical film can never be a substitute for the real thing or a good lesson, but it is a most useful aid to a good teacher. It brings the outside world into the classroom, and makes available as often as necessary expert treatment of a technical subject. The attention of the class can be focussed on a small area of interest by close-ups and magnification. All the tricks known by film-makers can be used to make vivid impressions on the class. It can survey a broad field of study in a short time, and can be used to reveal and explain the movements vital to the proper understanding of many subjects, through the use of slow-motion and time-lapse techniques.

Technical films should be used to the best possible advantage. It is useless to show a film on an odd afternoon when the teacher can think of nothing better to do. Each film should be properly integrated into the syllabus and used at the proper moment, and should be preceded by an explanation, shown in 10 minute sequences to offset "saturation", and then followed up by a discussion and a revision of the main points.

NEW TECHNIQUES

One of the important trends in modern technical education is an improved pedagogical approach to teaching problems, including the preparation of new-type tests for knowledge, skills and aptitude. The great importance of class activity and participation is given a new emphasis.

For example it has been established by controlled experiments that the most effective way of teaching a skill or technique is for the teacher to talk for about 10% of the time alloted, to demonstrate for about 25% of the lesson, and to allow the students to practice for about 65% of the lesson.

In spite of these results it is common to find a teacher talking for at least 65% of the time even when teaching a skill leaving 10% of the time to the frustrated class in which to practice.

RAISING STATUS OF TEACHERS OF TECHNICAL SUBJECTS

Special Training Colleges for Teachers of Technical subjects are growing up in some countries, and suitable men with some practical experience in industry are favoured for such training, although they are often not attracted by the pay and status of a teacher.

In view of the importance and educational value of technical subjects in secondary schools, the pay and status of teachers of these subjects should be at least on a par with that of other teachers.

It is important to spend more time, money and effort on the training of teachers of technical subjects, and on raising their status if the vitally important work they have to do for the next generation is to make its proper contribution to human progress.

BIBLIOGRAPHY

Education in a Technological Society, U.N.E.S.C.O., (1952).

Venables, P. F. R., *Trends in Technical Education*, Manchester Statistical Society (1955).

U.N.E.S.C.O. Source Book for Science Teaching, U.N.E.S.C.O., (1957).

Nathan, Lord, Presidential Address of the Annual General Meeting of the Institute of Civil Engineers.

Recent Developments in Technical Education, (1957).

The Education of Boys and Girls between the ages of 15 and 18, Association of Teachers in Technical Institutions, Hamilton House, (1958).

Cotgrove, *Technical Education and Social Change*, George Allen and Unwin, Ltd., (1958).

Year Book of Education, Evans Bros., Ltd., (1958).

The Crowther Report of the Central Advisory Council for Education 15 to 18 in England, Her Majesty's Stationery Office, (1959).

Venables, P. F. R., *British Technical Education*, Longmans, (1959).

Secondary Education, with special reference to Grammar Schools and Technical High Schools, Published by Her Majesty's Stationery Office, (1959).

COMMERCIAL EDUCATION IN SECONDARY SCHOOLS

by Inez Wells

DR. INEZ RAY WELLS, *the author of* Commercial Education in Secondary Schools *is Professor of Education in the Ohio State University in the Department of Education. She has taught also in the Teachers' Colleges in Colorado and Mississippi.*

Dr. Wells was till recently a consultant in Commercial Education and a member of the Ohio State University College of Education Faculty in India working with the Directorate of Extension Programmes for Secondary Education in the Ministry of Education.

The discussion here consists of two parts viz. the problems of the commercial stream of our multipurpose schools and the main aspects of the methodology of teaching commercial subjects. The problems listed include a variety of important items like the lack of a clear definition of the purpose of the commercial stream, inadequacy of guidance of students into the commercial stream, lack of flexibility of the curricula and syllabi for adaptation to individual community needs, heaviness of the total curriculum load, paucity of textbooks in regional languages, poor equipment of schools and the absence of facilities for the professional preparation of teachers of commercial subjects. In the context of rapid industrial development contemplated in our Five Year Plans and the inevitable demands for well-trained and efficient office and sales personnel that will follow, the removal of the above deficiencies become an imperative necessity.

In her discussion of the methods of teaching commercial subjects, the author divides them into skill and non-skill subjects, although each contains some elements of both. She offers practical and concrete suggestions for teaching both the types and discusses in detail the teaching of book-keeping. The author spotlights the value of involving students actively in the learning process through a variety of ways and the important role of the teacher to guide, to suggest resources, to help organise, to inspire and motivate and to help students to think and draw out meaning.

WITH the introduction of the multipurpose school pattern, it became possible for secondary schools converting to the pattern to offer commercial education to their students Of approximately 1500 multipurpose schools that have been established to date, 284 offer the commercial stream. As would be expected, the greatest concentration of commercial streams is in the States having large cities. Commercial education is offered to both boys and girls, but the boys enrolled in the course far outnumber the girls.

The purpose stated for the commercial stream varies somewhat from State to State, and even from school to school, but agrees in general with that stated in the Report of the Secondary Education Commission, which says that diversified courses, including commercial, should be offered

> 'which will train [students'] varied aptitudes and enable them either to take up vocational pursuits at the end of the secondary course or to join technical institutions for further training.'[1]

Commercial teachers whom the present writer has had the pleasure of meeting in seminars and in their schools agree that both groups, those going on for higher education and those going to work after completing secondary education, can be served in their classes since the practical application needed by the job-bound student is effective in helping both groups to understand, use, and remember the accompanying or underlying theory.

Although the required commercial curriculum differs somewhat from State to State, all follow somewhat the recommendations in the Draft Syllabuses for Higher Sescondary Schools.[2] Elements of commerce (sometimes called by other names, such as business practice) is the basic course. Commercial geography, including economics and civics, is required in some States; in others, the content of these subjects may be a part of the core requirements for all students. Book-keeping, typewriting, and shorthand are offered in all of the States with which the writer is familiar. In some States the student may choose between (i) book-keeping, and (ii) typewriting and shorthand. In others, he is required to study both book-keeping and typewriting and may elect shorthand.

Several problems of which commercial teachers are very much aware have arisen in the establishment and operation of the commercial stream. Some of them are presented briefly in the following paragraphs.

1. The purposes of the commercial stream in a given school are not always clearly defined. The administration may consider the stream as preparation for higher education, whereas the teach-

---

[1] *Report of the Secondary Education Commission*, Ministry of Education, Government of India (October 1952-June 1953), p. 27.

[2] *Draft Syllabuses for Higher Secondary Schools*, The All India Council for Secondary Education, 1957, p. 5.

ers recognize that it is terminal education for the majority of their students.

2. Guidance of students into or away from the commercial stream is not adequate. Some students are found in the classes who have no understanding of or interest in commercial education. Others who could profit from commercial education have elected other streams because they have not been aware of the values to be gained.

3. The curricula and syllabi of the States do not allow sufficient leeway for adaptation to individual community needs. In some cases, the syllabi seem to be practically the same as those prescribed for the universities, thus being above the maturity level of the students. In some cases the syllabi emphasize theoretical learning, neglecting practical application.

4. Because of the extensive core requirement, in addition to the commercial requirements, students have little time for study outside of classes. The result is superficial learning in all areas.

5. Textbooks in regional languages are not available in all States, and some that are available are inadequate or unsuited to the age level of the students. Other instructional material are extremely limited.

6. Equipment in many schools is limited to typewriters. Examinations contain question on other office equipment, but students are not given instruction in their operation. Frequently the number and/or condition of typewriters is inadequate. Another complicating factor in typewriting instruction is the fact that one or more States prescribe that some typewriters shall have English, some Hindi, and some regional-language keyboards.

7. A clear decision as to whether instruction shall be given in English or in the regional language is needed in shorthand, bookkeeping, and typewriting. In several States, the English background of the student is inadequate for effective learning in that language; yet it is assumed that English is the language needed by business workers. An investigation should be made to determine the demand for office and sales workers in each of the languages.

8. Commercial teachers have been forced to take their Bachelor of Teaching or Bachelor of Education degrees in areas other than commercial education, since commercial teacher training is not available. The basic courses, such as educational psychology and

general methods, have been helpful, but opportunity to learn how to direct skill development and to apply the principles of learning to the teaching of commercial subjects has been lacking.

Although the problems look formidable, it must be recognized that some of them are shared by other streams and that solutions are being sought in schools throughout the country. It must be recognized, further, that commercial education in many secondary schools is new, the first programs having been established in 1955. In the five-year period, the growth in the number of schools and the quality of instruction has been satisfactory. As each school surveys its community to determine the types of businesses, the positions open to matriculates and to college graduates, the duties at each level, and the channels of advancement, school programs should be adapted, within the prescribed curriculum and syllabi, to meet the needs of the students.

At the present time, emphasis is being placed upon rapid industrial development. If the experience of India parallels that of other countries, industrialization will be accompanied by increased demand by management for records of all kinds to assist in planning for future development; and this will result in increased demands for well-trained and efficient office and sales personnel, many of whom will not have gone on for higher education. School administrators and commercial teachers should, therefore, keep abreast of developments, know the demands for and the qualifications needed by business workers, and continue to improve the programs of commercial education in the multipurpose schools.

In order that these results may be accomplished, the secondary personnel must have the full co-operation of the universities and teacher-training colleges. In order to be competent, teachers must have an adequate background in both the subject matter and the skills to be taught; and they must know and use the most effective teaching methods.

METHODS OF TEACHING COMMERCIAL SUBJECTS

Space does not allow a full treatment of effective methods of teaching commercial subjects, but the writer has been requested to describe the salient features of this methodology.

The commercial subjects may be roughly divided into skill and non-skill subjects, although each contains some elements of both.

Typewriting, for example, requires skill in the operation of the machine. But the typist who cannot determine and use correct style for various letters and reports and correct punctuation, spelling, word usage, grammar, and so on, does not have a usable skill. Likewise, book-keeping requires an understanding of the principles underlying the system, but the person who has not developed skill in making the records has no real comprehension of the application of those principles.

Even in subjects such as elements of commerce, when attention is concentrated principally upon acquiring knowledge, understandings, and attitudes and upon seeing relationships, developing skill in the preparation of documents that are being studied may add immeasurably to the understanding of the student and to his ability to retain what he has learned.

TEACHING SKILL SUBJECTS

Attention will be called to a few of the principles of skill building. These apply most directly to typewriting and shorthand, but the same principles may be applied to elements in the non-skill subjects.

1. The learning situation should be as nearly ideal as it is possible to make it. Typewriters should be modern and in good condition; shorthand notebooks and pens (or pencils) should be of good quality. Table and chair heights should vary so that each student may be comfortably seated.[1] Lighting should be good to avoid eyestrain and increase accuracy. Copyholders should be used by typing students. Room temperatures should be kept at a comfortable level. Interruptions and outside distractions should be kept at a minimum. Adequate instructional material should be supplied.

2. The student should learn, through repeated demonstrations by the teacher and through his own efforts to adopt the methods demonstrated, the best techniques of operation. Since the best technique is the most efficient technique, there is a best technique for stroking the keys, returning the carriage, depressing the tabular bar, inserting and removing paper—in fact for performing all of the operations, which, when integrated, result in skillful typing.

---

[1] If a student is seated in correct typing position, both his hands and forearms will slant upward at approximately the angle of the keyboard. By using this test, the teacher can determine the correct height for both the table and the chair.

Skill in operating a typewriter does not come at once; it is a matter of continued refinement throughout the learning period. The effective typewriting teacher, then, must observe the students at work, demonstrate techniques that need to be improved, and conduct drills so that the students can effect improvement. He does this not once but many times over the years in which the students are in his classes.

In a similar way, the shorthand students see the teacher writing shorthand on the chalkboard. They observe the movements made, the direction in which the strokes are written, the continuity of writing. They imitate the writing motions of the teacher; they refine their own outlines.

3. Skill is gained in short, intensive efforts. Thus in typewriting a student will gain more from ten one-minute timings than he will from one ten-minute timing, provided that he has a goal for each writing and can measure his success in reaching that goal.

Let us assume that the teacher has chosen a short paragraph of material of average difficulty for repetitive drill in typewriting. During the first one-minute timing the student is asked to write at his best controlled rate (that is, as fast as he can write accurately). After he has checked his rate, he is asked to attempt to write faster during the second one-minute timing. A glance at his paper will tell him whether he has attained his goal, for even one additional stroke shows that he has increased his speed. The same goal, faster writing, may be set for the third and fourth writings. On the fifth, he may be asked to give special attention to good carriage return. Other goals might be to keep his eyes on the copy, to improve finger curvature, to release the keys more quickly, to maintain good posture. There must be a goal, but there must be only one goal at a time (which is another principle in skill development). Each, upon attainment, adds to his typing skill. The goal for the final timing should, of course, be to write at his best controlled rate. His accomplishment at this time will ordinarily be better than it was on the first timing. Skills built in this intensive fashion may be tested through the use of longer timings, say five minutes, which should show increasingly better results as the term progresses.

The same principle of short, intensive efforts may be applied to building shorthand skill. Let us assume that the class can write at the rate of 40 words per minute for five minutes. The goal is to increase their speed to 50 words per minute. Material of average difficulty, enough for dictation at 50 wpm for five minutes, is chosen. The teacher dictates for one minute at 40 wpm, after which the students are permitted (encouraged) to ask the teacher to write on the chalkboard any outlines of which they are not sure. Then, asking the students to write the same material plus a few additional words a little faster, the teacher dictates for one minute at 50. The third dictation has the same goal, writing the same material plus a few more words a little faster, and the dictation is for one minute at 60. Now the teacher, asking that the students write a little slower with more accurate shorthand outlines, dictates the same material, this time at 50.

The second "minute" of the dictation material is treated in the same way, dictation speeds again being 40-50-60-50, each for one minute. When all of the material has been practiced intensively, the teacher dictates the entire five-minutes "take" at 50 words per minute. Most of the students will be able to record all or nearly all of the dictation, for by now they have mastered the outlines and automatized the writing of some of them. After several days of such repetitive practice, using new material each day, the students may be ready to try a five-minute take at 50 without prior practice. If they are not successful, both students and teacher know that more practice is needed. There is no stigma of failure; the "test" was to determine need for additional practice. If the students are successful, then the rates for intensive practice are advanced to 50-60-70-60.

4. Intermediate goals must be established, goals that the students can resasonably be expected to attain. The practice patterns described above illustrate the establishment of intermediate goals. The terminal goal may be for higher rates and for longer periods of time, but both should be increased gradually. The commercial teacher should be aware, too, that if the rate at which shorthand students can take dictation for a shorter period of time is raised beyond that required in the terminal examination, the student can maintain a lower rate without undue pressure and fatigue.

5. Repetition must be purposeful. Mere repetition does not build skill; but skill can be built through purposeful repetition under the direction of the teacher, as illustrated above. That is why the teacher of typewriting walks about the room, observing the students as they type; he is trying to discover what drills are needed to improve techniques. That is why the shorthand teacher observes the students as they take dictation; he wishes to discover the weak spots so that purposeful repetition can be engaged in to eliminate them.

There are other principles of which the alert teacher is aware. These deal with the elimination of useless motions, the integration of the elements of a skill, attention to the individual learning rate, the gradual elevation of goals, and the need to provide for relearning, especially in elementary stages.[2] Space will not permit their inclusion here.

TEACHING BOOK-KEEPING

In learning book-keeping, a student is faced with the problem of unfamiliar terminology. Some of the words are entirely new to him, others are familiar words with new meanings. The teacher must be patient in explaining the words, in repeating their meanings, in teaching the students their spelling and pronunciation, in insisting that the students use the words and use them correctly. If the books are to be kept in a language other than the students' mother tongue, the teacher must be doubly, triply patient and persistent.

Since "a picture is worth a thousand words," the use of the chalkboard in presenting new principles and new records is extremely important. If the teacher of book-keeping finds that the chalkboards are too small for the work to be done, he should request; urgently and repeatedly if necessary, for additional boards.

Recently the writer visited a book-keeping class in which the teacher lectured throughout the entire period. Upon inquiry (since the language used was unfamiliar to the visitor), it was learned that the principle of adjusting accounts at the end of a financial period was being explained. All of the adjustments were being explained on that day, without illustrations or at least without chalkboard illustrations. The next day the illustrations would be given. The students in the class were attentive but passive.

---

[2] *Cf.* Lloyd V. Douglas, James T. Blanford, and Ruth I. Anderson, *Teaching Business Subjects*. Englewood Cliffs, New Jersey, U.S.A.: Prentice-Hall, Inc., 1958, pp. 122-125.

Contrast this with another class, also visited, in which one adjustment was explained and illustrated on the chalkboard so that the students saw how the ledger account was affected and what journal entry was necessary. When the second adjustment was introduced, the teacher asked the students what accounts would be affected, how, and what journal entry would be needed. The teacher illustrated this on the chalkboard, writing at the students' direction. The students were eager to participate, they asked questions, they analyzed the situation, they applied their knowledge and reached conclusions. They were participating actively in the learning process. They would remember because they understood the principle and had applied it. They had understood it because its application had been repeated several times, through a succession of similar illustrations. They had seen as well as heard. And all of these are good illustrations of how learning takes place.

Because book-keeping is difficult, especially for the younger students, it is frequently necessary to teach the lesson (to explain the principle) before the students are asked to read their textbooks. The reading then reinforces their learning and adds details which were omitted in the original presentation in order to concentrate attention upon the major elements of the principle.

Successful book-keeping teachers have evolved the following pattern for teaching:

1. Teach the new principle, tying it to the previous knowledge of the students, illustrating it thoroughly, and bringing students into the discussion.

2. Assign for study the section of the textbook devoted to the principle.

3. Review the principle to test learning and understanding and to allow students to ask questions. The students of a good teacher will ask questions because they know that he considers questions to be a sign of intelligence, not weakness.

4. Work out the first problem on the chalkboard, at the direction of the students. Sometimes only a part of the problem needs to be worked out together, just enough to see that the students really understand the application of the principle in making the records.

5. Assign a similar problem for homework, preferably having the students start the work in class so that their procedures can be observed.

6. Check the accuracy of the work to determine points that need to be re-taught. Students may actually do the checking, referring to the teacher's work which has been placed on the chalkboard before class.

7. After re-teaching any points that were not thoroughly understood, assign another problem so that learning will be fixed.

8. Test learning by having a short problem worked in class.

9. Re-teach, if test results show that it is needed.

Since learning in book-keeping is spiral, with the necessity for using and re-using each principle, the necessary spaced reviews and repetitions are provided.

TEACHING NON-SKILL SUBJECTS

As indicated above, the more actively the student is involved in the learning process, the better he learns. Acceptance of this fact leads to the realization that the lecture is the least effective method to use in a secondary school, for during a lecture the student is passive. Let it be acknowledged that, especially when instructional materials are inadequate, there are times when the teacher is under obligation to bring certain materials to the students. Talking (lecturing) isn't bad; it just is not the most effective method of teaching.

Education has been defined as a change in behaviour. If this is true, memorization (perhaps for the purpose of passing an examination) is not true learning nor true education. There are items of information that should be memorized; it saves time to know them. But the purpose of memorization is *use*: use in analyzing; use in evaluating; use in thinking; use in solving problems; use in changing behaviour.

What are some methods that will involve students actively in learning, that will include memorization but put in its proper place, that will lead to growth and to change in behaviour? A few illustrations will serve to stimulate the thinking teacher to find other methods suited to his own classes.

Involve Students in Planning: Although the minimum scope of each commercial subject is prescribed by the State syllabus, this brief outline must be developed by the teacher, and he will find that the class studies more eagerly if they are allowed to help in the planning. Many of the topics are somewhat familiar to students. How can the teacher discover what the students know, correct erroneous notions, and extend their knowledge, understanding, and skills?

To find out what experiences students have already had and to avoid unnecessary repetition, the teacher may ask them to check a list of items (activities and facts) relating to the unit. This may be done a few days before the new unit is introduced, for a tabulation of the results will help the teacher know how to introduce the unit, proceeding from the known to the unknown.

Whether or not a check list has been used, a student discussion of the experiences they have had will show points where they are misinformed and areas with which they are entirely unacquainted. This discussion can easily lead to the teacher's asking, "On which of these points do we need to check?" and "What other points would you like to know more about?" Around students' suggestions may be woven the additional items which the teacher knows must be given consideration.

The areas that must be covered will be determined by the objectives of the course which must be set up by the teacher and kept in mind throughout the development of each unit. Objectives act as guide lines of what to include, what to omit, what emphasis to give, what skills to develop, what understandings and attitudes to strive for.

Division of Labor: Some teachers find that, beyond the basic minimum that all students must study, not all need to investigate all of the items that are suggested. Students may volunteer to do research on certain items and to report their findings to the class. Usually several students work together, dividing the work and constructing charts or posters to help in making an effective presentation of the pertinent points.

The class should be encouraged to listen to the panel attentively, to ask questions, to challenge statements. This, too, is active participation; and it keeps the panel members on their toes.

Class Discussion: It has been said that,

Two of the most common mistakes made by beginning teachers are failing to use the blackboard and talking too much. Too often the teacher "tells" the students what they already know rather than leading them into a profitable class discussion.[3]

What is a profitable class discussion? It is *not* a question and answer period, with the teacher asking a question and calling upon a student for the answer. It may be started by a question from the teacher or one from a student. It may be started by examining a business form, observing a demonstration, listening to a skit—by anything that stimulates interest and thinking. It is a conversation, where one person's suggestion stimulates a comment by another which, in turn, may cause someone else to disagree or to question. All sides are examined, proof of points of view are offered, illustrations are given. Finally agreement may be reached or questions for further examination may be raised. Such, too, is a discussion in a classroom. The teacher's role is subordinated, for his voice or his opinion usually means "authority" and ends the discussion. He may, however, help formulate questions for further investigation; or if no further investigation is needed, he may help the students summarize. The teacher needs also to guard against prolonged discussion where no one knows what is being talked about.

Reading Material: If students are to be actively engaged in the learning process, where may they find the answers to their questions? Textbooks are one but by no means the only source of information. Reference books in the school, city, and home libraries may be used. The alert teacher will develop a resource file in which he will place pamphlets (often provided at little or no cost by government or private agencies), clippings from magazines and newspapers (or references to them if they cannot be clipped), descriptive advertisements, charts, graphs, maps, legal forms, references to pertinent films and filmstrips, and other materials pertaining to each unit.

Students may be invited, urged, or required to provide resource materials. If their interest is stimulated and if credit is given for their contributions (such as, "Presented by——"), many interesting items will be supplied. They may wish to present illustrated scrapbooks, special reports, or posters they have made, clippings, cartoons, or business forms and letters received in the home. They may supply samples of actual products that are related to the discussion. Care should be taken to ascertain whether the student is giving the material to the class or only lending it to them for a short time.

---

[3] Vernon A. Musselman, "Helping General Business Students to See, Hear, and Think." *The National Business Education Quarterly*, December, 1958, p. 36.

Interviews: Students may be assigned to visit certain business or government establishments to interview persons who can furnish needed information. This provides opportunity to teach the class how to ask for an appointment, how to prepare for the interview, how to carry through the interview, how to express their appreciation for the courtesies extended them, and how to report to the class.

Speakers: Speakers may at times be invited to the classroom, with proper arrangements through the school office. Or the class may organize a field trip to observe at first hand activities in the community. Each of these activities must be carefully planned, carried through, and discussed if it is to provide a satisfactory learning experience. Students should be involved in every stage of the planning so that it will be their project and so that they may learn to organize, to assume responsibility, and to co-operate.

Learning through Doing: Care should be taken to assure that the student is not learning "about" when he should be learning "to do." When business forms are studied, for example, the student should not only study the form—the check, deposit slip, promissory note, draft, bill of lading—but he should be given practice in completing the form. By doing, he increases his understanding; by the right kind of repetitive doing, he gains skill. If the actual printed forms are not available, they may be mimeographed and distributed to the students to be used in problem situations.

Role Playing: Dramatization and role playing may be used to stimulate actual experiences. Since the student cannot, for example, go to the post office and buy a money order to enclose in an order letter which he has been required to write, the stage can be set in the classroom and the activity dramatized. A skit may be worked out (preferably by the students) and the parts memorized; but frequently understanding the situation and speaking extemporaneously is even more effective. One student plays the role of the purchaser, the other of the seller. The proper forms are used, and conversation suited to the situation is engaged in.

The writer observed role playing showing a business man making the necessary contacts for permission to export commodities. The "business man" acquired the necessary forms (with which the class had become familiar) and took them in turn to first one and then another official for approval. Placards displaying the titles of the officials added to the effectiveness of the presentation.

The resourceful teacher will plan ahead for such simple, but dramatic, roles, provide (with the help of his students) the essential stage setting, encourage students to say what they would naturally say in the given situation, and arrange so that every student will have not one but several opportunities to participate.

Other activities: Other types of activities in which students may engage are keeping notebooks, making scrapbooks, developing individual projects, serving on committees, preparing charts or graphs or posters, demonstrating processes and procedures, preparing exhibits, giving reports, making surveys, reading supplementary materials, analyzing advertisements, and observing and participating in community activities.

The Teacher is Important: All of this does not mean that the teacher should never speak in the classroom. Far from it. He is there to guide, to suggest resources, to help organize, to add depth and direction to the learning. He is there to inspire and motivate, to praise and encourage, to help the students think and draw out meaning. Activity for activity's sake is wasteful; it is busywork. Activity to be educative must be purposeful; and it is the teacher who sets the purpose of the course.

TEACHING OF HOME SCIENCE IN SECONDARY EDUCATION

by Rajammal P. Devadas

THE *author of* Teaching of Home Science in Secondary Education *is Dr. (Mrs.) Rajammal P. Devadas who is the expert on home science education in the Ministry of Food and Agriculture of the Government of India. Dr. Devadas had a brilliant record of specialisation in home science in the Universities of Madras and Ohio State. The early years of her career were spent in research in the Women's Christian College, Madras and teaching in the College of Nursing, Delhi. She worked as the Dean of the Faculty of Home Science of the Baroda University during the years 1953 and 1955 and put the institution on sound foundations. Later she joined the Government of India as Chief Home Economist and is at present their Joint Director in the Directorate of Extension and Training.*

The author here discusses clearly almost all the aspects of home science education in secondary schools. Starting with an elaboration of the objectives of the teaching of home science in secondary schools, she clarifies the concept of home science in the context of modern life and our ancient culture. This is followed by a survey of the present status of home science in secondary education wherein she lists the problems that we are faced with in this field.

Dr. Devadas deplores the paucity of facilities in the country for the training of the home science teacher and makes valuable suggestions for the provision of adequate facilities for this as well as for its natural expansion to meet future needs. While the author stresses that there is need for the home science syllabus to be flexible so that it will reflect the trends in society, the impact of the community development programmes and the needs of adolescent girls, the right teacher, in her view, is of supreme significance because the teacher is the heart of the programme and her abilities, leadership and professional dedication are the determining factors in the success of the course.

OBJECTIVES OF SECONDARY EDUCATION

THE Secondary Education Commission appointed by the Government of India in 1950, stated the following among the objectives of Secondary Education: —

"Education should be suited to the secular democratic Republic of India duly contributing to the development of habits, attitudes and qualities of character essential for the responsibilities of democratic citizenship."

* * *

"Education must have to increase the national wealth, since India is a poor country, though rich in potential resources."

* * *

"Education should stimulate a cultural renaissance."

The Secondary Education Commission also made the following observations with regard to the teaching of Home Science in High Schools: —

> "There was a general agreement, however, that for girls as well as for boys—education needs to be more closely connected with the home and the community. It should be less bookish in the narrow sense of the word and more practical and should explore the possibility of training the mind through the hands. It should do much more to prepare them for the part they will have to play later as parents and as citizens, i.e. the claims of family life should be considered as important as those of public life. For this reason, it was urged that the teaching of Home Science in girls' schools (and wherever possible, for girls attending boys' schools) should be radically improved not necessarily with the idea that women's place is restricted to the home, but because it is essential that she should be educated to fulfil her two-fold duty to family and society. If greater attention is given to Home Science, with special emphasis on practical work of everyday needs and problems, it will help to bridge the gulf between the school and the life of the home and the community, and be a better preparation for the girl's life after school, in which home making will necessarily play an important part. An educated girl who cannot run her home smoothly and efficiently, within her resources can make no worthwhile contribution to the happiness and the well-being of her family or to raising the social standards in her country."

* * *

> "While no distinction need be made between education imparted to boys and girls, special facilities for the study of Home Sciences should be made available in all girls' schools and co-education or mixed schools."

HOW HOME SCIENCE FULFILS THE OBJECTIVES OF SECONDARY EDUCATION

Home Science is education for living. Unlike most of the other school subjects, its nature and scope help girls to become better home makers and mothers. Therefore it makes a vital contribution to the nation towards the attainment of the aims of secondary education. Secondary education is often the terminal education for the girls of today, who are the potential mothers of tomorrow.

A large number of women in India are engaged in home making, and rarely go for careers outside the home. Therefore, they need an education at the secondary school level which will prepare them adequately for the functions and responsibilities of home making. Home Science teaches all the skills and techniques necessary to run a household satisfactorily as well as to earn a living. Its relationship and practical applications to life lead to building sound habits, attitudes and character in the members of the family. It develops a desire in pupils to appreciate and preserve the best in our culture. Because of all these values, Home Science has been recognised as education for living.

HOME SCIENCE AS A MULTIPURPOSE SUBJECT IN GENERAL EDUCATION

With the reorganisation of secondary education consequent on the democratic concept of universal education, our schools are now attempting to provide courses that serve the purposes of general education. Home Science fits admirably in the diversified system of courses, because it not only makes available to all public skills and techniques in living, but also serves those students who may continue higher education or take further vocational training.

CONCEPT OF HOME SCIENCE

Till recently, Home Science has been regarded only as certain skills in cooking and sewing and therefore, not academic. This has led to the misunderstanding that only the less intellectual are drawn to the study of Home Science. Therefore it is necessary that the right meaning of Home Science is recognised and promoted in girls' schools.

Modern life is becoming, more and more complex with the increasing strides made by scientific advances and technological progress. Consequently, the home maker of today has to adjust her time, efforts, money and other resources to the demands of personal, family and social life. Her responsibilities like bringing up children, preparation of food, care of clothing, home management, maintenance of family relationships and spiritual values in the home are all affected by current changes in the society and, therefore, she needs education in all these areas, to derive the maximum benefit from the progress made in the socio-economic-scientific fields. In adjusting to these changes, she needs to retain the best in our ancient culture. Home Science helps to give this education.

PRESENT STATUS OF HOME SCIENCE IN SECONDARY EDUCATION

The Secondary Education Commission gave importance to Home Science as an independent group of subjects to be taught during the last four years of secondary school. The All-India Secondary Education Council further included Home Science (in addition to its being an independent group) also as a part of the other elective groups such as science, humanities and the fine arts, to be taken in the last three years of secondary school. Thus in the present revised scheme, it is possible for a girl to take Home Science completely as a diversified subject; or as one of the many subjects in the optional groups such as sciences, humanities and the fine arts.

The Government of India have encouraged the starting of Home Science sections in several higher secondary or multi-purpose high schools in the country. A "Draft Curriculum" for the three years' study has been prepared and sent to State governments. Through short course, seminars and workshops several teachers throughout the country have been oriented to teach that curriculum. Guide books, reports and pamphlets have been published to aid the teaching of Home Science. Several articles on Home Science have appeared in "Teacher Education" published by the All-India Council of Secondary Education. However, much remains to be done to make Home Science real and meaningful to the pupils and attract a large number of them to study the subject. The teachers of Home Science face a great many problems.

SOME OF THE PROBLEMS

A recent study conducted by the Ohio State University Education Team in India on the status of the practical streams of multi-purpose high schools revealed the following obstacles to the complete realisation of the ideals envisioned by the Secondary Education Commission: —

1. Lack of agreement on the purpose and functions of the multi-purpose high schools and of the practical streams provided in them.
2. Inadequacy of accommodation and physical facilities.
3. Dearth of instructional materials.
4. Shortage of qualified teachers, especially in the practical streams.
5. Absence of provision for the pre-service training for such teachers.
6. Lack of provision for vocational-guidance personnel.
7. Absence of diversity of courses.

Although the Team did not study the problems relating to Home Science, the above are true in the case of Home Science also to some extent. In many schools, the teachers handling the subject are not qualified to teach Home Science. There are not enough Teacher Training Colleges to train teachers of Home Science. Several schools are ill-equipped physically to offer the subject in spite of the grants given for the purpose. There are only a few books written in India in the field of Home Science. The teaching of Home Science is so unrelated to the daily life of pupils that they are not attracted to its study. Some State governments and universities have not given the same recognition to Home Science as to other subjects in the order of eligibility for college admission. Moreover, some of the prevailing systems of examinations are absolutely unsuitable for promoting the study of Home Science. Because of these and other reasons, Home Science is not popular in high schools. Amazingly, this situation is in striking contrast to the increasing popularity enjoyed by Home Science at the collegiate level, where the enrolments are rising constantly.

IN-SERVICE TRAINING FOR TEACHERS

The number of schools offering Home Science in multi-purpose schools is on the upward trend. While this is encouraging, we must see that the quality of teaching and the teaching facilities are adequate. To remove the handicaps arising out of not having the required number of teachers with Home Science degrees, the All-India Council for Secondary Education had sponsored a number of camps and courses for teachers of Home Science at the State and regional levels. Reports of these camps have turned out to be valuable reference material for the teachers all over the country. The Council had also brought out a Hand-book of Suggestions for Home Science Teachers. Experts under the T.C.M. have been working in the various Home Science Colleges, through the University of Tennessee Contract. If the contacts made at these camps can be maintained through proper follow-up, and the teachers helped to apply the knowledge obtained, a great progress is bound to happen.

During 1958, a seminar-cum-training course for teachers of Southern Region was conducted at the Sri Avinashilingam Home Science College, Coimbatore by the author. From the thirty-two teachers who participated, it was gathered that the different States had different syllabus for Home Science and were making attempts to adapt the Draft Syllabus prescribed by the All-India Council for Secondary Education. During the Seminar, several new methods of teaching Home Science were introduced. A follow-up study of the results of those methods has revealed that the group discussions and demonstration methods appeared to be most popular.

Among the problems listed by these teachers are: —

1. Lack of accommodation, equipment, suitable reading materials in the regional language.
2. Difficulty to contact the families of pupils.
3. Lack of library in the school.
4. Lack of understanding about the scope of Home Science on the part of the head mistress.
5. Departmental delays in sanctioning books and equipment.

THE GREAT LEEWAY TO MAKE

More and more refresher and in-service training courses are required to cover the needs of the country. These in-service programmes mark just a beginning. A casual survey made through the participants discloses what a great leeway we have yet to make!

Children and parents have not quite realised the value of this subject as 'education for life' and seek admission to alternative courses. In many schools, the subject is taught as dry as dust theory and not woven around the problems and needs of the adolescent girls and those of the home, to be satisfying and significant. This can be done by only properly trained teachers in Home Science. A vigorous, systematic and intensive training programme is thus indicated. Regional Training Centres can meet to some extent this need. The long range solution will be to induce more colleges to offer courses in Home Science at pre-university, under-graduate and post-graduate levels. Proper incentive and inducements are needed to attract suitable students for teacher training. There should be atleast one good Teacher Training College for Home Science in every State.

Thousands of girls still study in boys' schools. The Home Science, if it is given for them at all, is neither adequate nor systematic. Boards of Secondary Education have to become alive to this problem.

The survey also revealed that even the properly trained teachers are often handicapped through lack of such physical facilities as laboratory, equipment, books, audio-visual aids etc. The Extension Departments of the Directorate of Extension Programmes do offer library and audio-visual services in selected areas, but such services are extremely limited and sometimes they do not have facilities in Home Science. Red tape often stands in the way of heads of schools in the building up of a laboratory, or the buying of equipment or books. All these obstacles need to be overcome, if Home Science instruction is to be made effective in schools.

Many teachers have admitted that the time allotted to the teaching of Home Science is woefully inadequate. This needs reconsideration. Home Science is as important as any other science or art subject and must receive equal recognition of time allotment in the school day. As more understanding is gained in the scope of Home Science in high schools, this problem will be solved.

Others have cited the absence of good Home Science texts and source materials in the regional languages. This is an area in which immediate action is called for. Outstanding teachers of the subject should be spotted and commissioned to write suitable materials for use in Home Science instruction.

THE HOME SCIENCE TEACHER

The Schools can have very good equipment, exemplary laboratories and excellent text-books and yet fail to provide an adequate programme in Home Science if the teacher *herself* lacks understanding of the importance and potentialities of the subject. The teacher is the heart of the programme and her abilities, leadership and professional dedication are the determining factors in the success of the course. The teacher is the key person in the popularisation of the subject. It will be difficult to defend the introduction of the subject in the curriculum if she is not aware of the desirable outcomes of the subject, if she does not realise that the teaching must extend opportunities to students for first hand experiences in the home, with real materials, and, if she is not in a position to evaluate the knowledge of concepts and performance skills involved in the learning of the subject. She must have the mastery of the subject matter and the educational training needed for a more realistic understanding of the cultural and economic background of varied groups of families, as well as skills in the development of materials for use in the class-room.

THE SYLLABUS SHOULD BE FLEXIBLE

Further, there will be many changes in our lives in the years ahead and our girls are entitled to an education that will prepare them to meet the challenge of these changes. If we still seek to stifle them within a prescribed syllabus, and a pattern of teaching that were used with varying degrees of success in the past, they will not be able to play their part effectively in the bright days to come. Hence our syllabus must reflect the trends in society, the impact of the Community Development Programmes, and the needs of our girls. Our teaching must be based on the latest knowledge regarding the nature of the adolescent girls and their ways of learning. Such instruction should fit in with our cultural heritage and the philosophy of life and spiritual values we hold dear and sacred.

A syllabus can never be final in any sense. It needs constant study, evaluation and revision in the light of the rapid changes taking place around us.

CONCLUSION

Home Science has come to occupy its rightful place in the education of girls in secondary schools. There is rapid increase in number of multi-purpose/higher secondary schools offering Home Science. As a result of this tremendous growth, there are some acute problems facing the administrators, schools, teachers, parents, pupils and the community. All of them need to appreciate fully the philosophy and purposes of teaching Home Science in multi-purpose high schools, specifically with reference to the objectives of secondary education and national needs and development. The existing Home Science curricula for higher secondary schools in the different States should be evaluated and revised from time to time in the light of previous experiences and developing needs and trends. Suitably trained teachers, who are dedicated and interested in the ideals of Home Science should be employed and given all the facilities and instructional materials required for good teaching. The administrators of schools need to give the teachers all possible encouragement in their task. Through meetings of Parent-Teacher Associations, and other community activities, the scope of Home Science and its career possibilities should be explained to the prospective pupils. Incentives and assistance should be extended for the production of Indian literature in Home Science in the local languages. The Home Science programmes should be constantly evaluated from all aspects, so that greater progress can be made in the future. For this purpose, seminars and in-service training should become integral parts of the ever flowing stream.

BIBLIOGRAPHY

Report of the Secondary Education Commission, October 1952, Ministry of Education, Government of India.

Draft Syllabuses for Higher Secondary Schools, 1957, All India Council for Secondary Education, Ministry of Education, Government of India.

Report of the Home Science Camp, 1956, Sri Ramakrishna Mission Vidyalaya Teachers College, Coimbatore Dt.

Report of the Home Science Camp, 1957, Sri Ramakrishna Mission Vidyalaya Teachers' College, Coimbatore Dt.

Report of the Seminar-cum-Training Course for Northern Region, 1958, Lady Irwin College, New Delhi.

Report of the Seminar-cum-Training Course for Southern Region, 1958, Sri Avinashilingam Home Science College, Coimbatore-2.

Catalogue of Home Science Literature, 1959, Directorate of Extension Department of Agriculture, Ministry of Food & Agriculture, Government of India.

Teaching Home Science, Devadas, Rajammal P., All India Council for Secondary Education, Ministry of Education, Government of India, 1958.

A PROGRAMME OF HOME ECONOMICS IN TEACHER PREPARATION

by Mildred Horton

JUST *mention the American Home Economics Association and for those 'in the know' the name conjures up a portrait of Miss Mildred Horton, a woman of leadership and dignity who has been its Executive Secretary for the past twelve years. During her tenure with the American Home Economics Association, Miss Horton has watched—and worked to make it so—the Association reach its greatest growth and expansion of influence. Miss Horton is known in international circles through her work with the International Federation of Home Economics. She served during 1959 as Congress Director at the Ninth International Congress on Home Economics which met in the University of Maryland. Miss Horton has been a member of two White House Conferences, on Home Building and Home Ownership, and on Child Welfare and she was a member of the President's Nutrition Conference in 1941.*

The author discusses here the programmes for teacher preparation in the colleges and universities, the in-service training programmes and efforts by professional organisations to contribute to the on-going preparation of teachers and to the improvement of teaching of home economics (science). Though there is no national syllabus in home economics (science) in the U.S.A. and though colleges preparing teachers plan their curriculum so that their graduates will be able to meet the requirements established by the State in which the college is located, there is a regular process of co-ordinating the programmes through conferences and publications, the consultative services in the field rendered by the United States Office of Education and by the American Association of Home Economics.

THE aim of home economics teaching in the United States is to aid individuals to live as successfully as possible in their personal and family lives. The home economics teacher helps the student acquire not only knowledge but also understanding of the application of knowledge and the ability to make wise decisions based on the knowledge acquired. For example, a student learns not only the basic facts of nutrition, but also acquires an understanding of the influence of good or poor nutrition on her own well-being. She also develops the ability to make decisions about food choices or money spent for food that will be appropriate and possible in the situation in which she finds herself.

It is obvious that all teachers must be familiar with their subject matter and be able to impart it to others. Home economics teachers must also be able to relate the subject matter to the individual, to her home environment, and to her cultural or community pattern of living. To achieve this, home economics in teacher preparation provides basic education in the areas of subject matter included in home economics. In the United States these areas usually include family relations and child development, family economics and home management, food and nutrition, housing and household equipment, textiles and clothing, and art related to the home.

As a supplement to the home economics programs for teacher preparation in the colleges and universities, constant in-service training and efforts by professional organizations contribute to the on-going preparation of teachers and to the improvement of teaching.

In addition to knowledge of subject matter, the prospective home economics teacher is given a broad general education, some experience with families and some teaching under a supervisor. She must also have some course in pedagogy or educational methods. These are requirements that can be set forth in college catalogues as so many courses or so many credits to be earned in each.

Teacher preparation must also help the prospective teacher develop the ability to distinguish between a principle that must be held to and the many possible patterns of living that can incorporate this principle. She must be able to judge the level of success or achievement that can be expected by the individual or the group with which she is working and inspire achievement at this level. She is not taught a set of "standards" to be expected of everyone. This ability to be flexible is especially important for two reasons: the local control of what is taught in the schools and the rapidity of change in our society.

The curriculum that the secondary school teacher provides is influenced by the local school authorities or by the department of public education at the state level. There is no national syllabus of home economics.

Teachers must be licensed in order to teach in the public schools. Licenses are issued by the states. Colleges preparing teachers plan their curricula so that their graduates will be able to meet the requirements established by the state in which the college is located. Each state has its own requirements for the license to teach, but the differences in the state requirements are not great and it is usually relatively easy for a teacher to obtain a license in different states.

The constant moving about of people in the United States—both the teachers in the secondary schools and the professors in the colleges and universities—and the many national conferences and publications contribute to a high degree of similarity of programs and curriculums in most states and in most of the colleges and universities that educate teachers.

Another unifying influence comes from the United States Office of Education which gives consultative services to teacher-training colleges and universities, and arranges regional and national conferences of college teachers and state and city supervisors of public school education. This Office encourages public school and college or university teachers to keep uptodate in subject matter and methods of imparting it. The Office also encourages research in educational methods and experimentation at all levels of education. A current study of interest to teacher preparation in home economics is an Office of Education survey of secondary schools across the nation to determine which of the home economics subject-matter areas are being taught in secondary schools and the percent of time being devoted to each. The results of the survey will indicate how well secondary school programs are keeping pace with current philosophy of home economics. It may indicate areas where programs in the colleges could be strengthened to give a teacher greater confidence in her ability to teach a certain area. Another use of the findings of such studies is for in-service training.

A most important project of great importance to programs of teacher preparation is the recent work of a committee on the philosophy and objectives of home economics which was appointed several years ago by the American Home Economics Association. The committee represented teacher preparation, research, and other areas of home economics. Its assignment was to study the professional objectives of home economics and to make recommendations in light of today's conditions, needs, and possibilities.

The committee report, published in June 1959 under the title *Home Economics—New Directions*, said that in view of our rapidly changing society we must prepare the individual to deal successfully with new situations. We must help him develop certain fundamental abilities or competences that will continue to be effective in personal and family living regardless of the particular circumstances of the individual or family.

"As home economists," the committee said--and this applies to teachers and to all home economists—"we can measure the success of our work by the extent to which we contribute to the development by individuals and families of these competences."

Though the committee was thinking particularly of individuals and families in the United States when it formulated its list of abilities, they are sufficiently international to be worth quoting here:

Fundamental to effective living are the competences to:

(i) establish values which give meaning to personal, family, and community living; select goals appropriate to these values;

(ii) create a home and community environment conducive to the healthy growth and development of all members of the family at all stages of the family cycle;

(iii) achieve good interpersonal relationships within the home and within the community;

(iv) nurture the young and foster their physical, mental, and social growth and development;

(v) make and carry out intelligent decisions regarding the use of personal, family, and community resources;

(vi) establish long-range goals for financial security and work toward their achievement;

(vii) plan consumption of goods and services—including food, clothing, and housing—in ways that will promote values and goals established by the family;

(viii) Purchase consumer goods and services appropriate to an overall consumption plan and wise use of economics resources;

(ix) perform the tasks of maintaining a home in such a way that they will contribute effectively to furthering individual and family goals;

(x) enrich personal and family life through the arts and humanities and through refreshing and creative use of leisure;

(xi) take an intelligent part in legislative and other social action programs which directly affect the welfare of individuals and families;

(xii) develop mutual understanding and appreciation of differing cultures and ways of life, and co-operate with people of other cultures who are striving to raise levels of living.

The enthusiasm with which the committee's report has been received by the members of the American Home Economics Association and the thoughtful study it is receiving indicate that programs of teacher preparation will be influenced by it, probably in many ways.

The committee itself urged colleges and universities to strengthen the undergraduate curriculum in the root sciences and the arts and to provide both depth and breadth of education. It challenged home economics educators to "focus instruction on development of the competences important to the pattern of effective living; to co-operate in developing an educational program that will reach men, women, boys and girls of varying abilities and from different cultural, social, and economic groups; to plan for an effective progression of home economics education from one educational level to another; to increase public understanding of home economics; and to extend home economics to other countries."

In the six months since the report appeared, the Association has distributed about 20,000 copies. Hundreds are being used by college faculties in studying curriculum or in teacher education classes. An equally large number of copies have been distributed to conferences of teachers by the state supervisor of home economics education.

The *Journal of Home Economics* has also published the complete text of the report, as well as several articles interpreting its significance to various occupational groups within the profession of home economics. This, too, will influence teacher preparation, for home economics is a subject that can change in response to new philosophy and new situations.

Home economics in the United States is becoming increasingly an area dealing with human relationships, decision-making, and management in the total environment of personal and family living. The colleges and universities where our teachers are educated have been among the first to recognize this trend. Through their programs of teacher education, they help to transmit to the new generations of teachers this philosophy—and this hope for more effective living for all people.

BIBLIOGRAPHY

Home Economics in Higher Education. Prepared by AHEA Committee on Criteria for Evaluating College Home Economics Programs, The American Home Economics Associations, Washington, D.C., 1949.

Home Economics—New Directions. Prepared by AHEA Committee on Philosophy and Objectives of Home Economics, The American Home Economics Association, Washington, D.C., 1959.

Education in Home Economics Relative to the Social and Economic Conditions of the United States of America. Report submitted by the American Home Economics Association for the Preliminary Reports of the Ninth International Congress on Home Economics, 1958.

Education for the Professions. Office of Education, U.S. Department of Health, Education, and Welfare, Washington 25, D.C., 1955.

Journal of Home Economics. Official organ of the American Home Economics Association, Washington, D.C.

Publications of the Home Economics Education Branch, U.S. Office of Education, U.S. Department of Health, Education, and Welfare, Washington 25, D.C.

Catalogues of colleges and universities. Published by each college or university to describe course offerings, requirements, fees and so forth.

A PROGRAMME OF HOME ECONOMICS IN TEACHER PREPARATION

by Treva Kauffman

MISS TREVA E. KAUFFMAN, *the author of* A Programme of Home Economics in Teacher Preparation *is a person with a rich experience in the field of teaching and administration. She has taught in secondary schools of all types, she has been an Extension Service Instructor and Assistant Professor of Home Economics Education in the Ohio State University, the State Supervisor of Home Economics Education in the Department of Education of Ohio and New York States and Director of Summer Sessions in the subject in a number of Universities and Colleges. She has been a lecturer in the subject in New York University, Columbia University, University of Cincinnati and other institutions. At present Miss Kauffman is a Visiting Lecturer in the College of Home Economics and School of Education of the Syracuse University. Chief among her books is* The Teaching Problems in Home Economics.

In this chapter the author traces the history of the teaching of home economics (science) and teacher education in the U.S.A. and describes the existing provision for these in the country. The philosophy of home economics (science) education is clearly stated here and the essentials that an effective educational plan for home economics (science) are listed. The teacher education programme in the context of other areas of the subject is also vividly described.

HOME ECONOMICS—FIFTY YEARS OF LIVING

HOME economics in the United States of America is celebrating its 50th Anniversary in 1959. Its early pioneers and its founder, Mrs. Ellen H. Richards, debated its values at the Lake Placid Club conferences in New York State over a period of years from 1899-1908, and finally organized the American Home Economics Association in Washington, D.C., December 31-January 2, 1908-09. The teaching section was an important part of these preliminary conferences, giving thought to an analysis of the content to be taught in home economics, and an impetus to its introduction into colleges, universities, normal, and secondary schools of the country.

Thus, home economics has found its way into the majority of colleges and all secondary schools in the U.S.A. This brought about a definite need for teachers of home economics.

With passages of Federal Acts of Smith-Hughes and George-Barden, strong departments of home economics were built in colleges and universities and teacher preparation was strengthened. In New York State, twelve colleges and universities are approved by the New York State Education Department for training home economics teachers. They are, the State College of Home Economics at Cornell University, Ithaca, N.Y.; the College of Home Economics at Syracuse University; three State Colleges of Education at Buffalo, Oneonta and Pittsburg; three city colleges of New York City—namely, Hunter, Brooklyn, Queens; Skidmore College at Saratoga; Russel Sage College at Troy; New York University at New York City; and Teachers College at Columbia University in New York City.

Other states have similar approval with colleges and universities. With all these provisions made, there is still a shortage of qualified teachers, and career selection is one of our basic objectives.

Many countries are looking to the United States for assistance in preparing trained home economists for developing the program in their countries. Colleges in this country have given help in this training to students arriving from other countries; also professional home economics women have taken leaves of absence to assist countries in this important development.

There is much need in this area. Dr. Benjamin Andrews, formerly Professor of Home Economics at Columbia University's Teachers College, stated recently, "Home economics should make a definite contribution to the undeveloped nations by raising the standard of living, as we have done in the United States in the past fifty years, with home economics education."

WHAT IS AN EDUCATIONAL PLAN FOR HOME ECONOMICS WHICH MIGHT BE ANSWERED IN THIS WAY?

An effective educational plan for home economics education provides:

1. A curriculum founded on fundamental values of home living and homemaking.

2. School (or college) experiences derived from needs and concerns of individuals and families.

3. Scheduling of students at proper stages of development to appreciate the social significance of home-making and to assume managerial responsibilities in the home.

4. A program sufficiently intensive and extensive to enable students to participate effectively in home-making.

5. A long-time plan to meet the needs of various age groups and to consider educational opportunities provided by homes, school (or college) and community.

6. Development of community understanding and participation.

7. Space and equipment for development and enrichment of the program.

8. Cooperative relationships with administrator and school (or college) personal to develop mutual understanding and appreciation of educational programs.*

AS HOME ECONOMISTS, WE BELIEVE THE FOLLOWING

Since personal and family living is of concern to all people, home-making education or home economics can make significant contributions at all age levels, in and out of school and college, and to boys and girls, men and women.

In a changing environment, as we now face in the world, every individual faces problems in establishing a satisfying manner of home and family living. The purposes of home economics education are naturally, to recognize situations as they exist, to help individuals achieve changes they desire, and to guide them toward worthy contributions in family life. A home economics program built upon these major purposes can contribute to general education as well as to specialized and vocational training.

We may assume in college, as well as in secondary schools, that students will desire to elect some courses in personal and family living as a part of their general education.. Others will desire preparation in major professional areas, such as teacher education, family life education, nutrition and food, clothing, textiles and design, applied arts and interior decoration, home economics in business, institutional management and administration, child development, household technology, and family economics.

---

* The State Education Department of New York. Handbook 43 (July, 1952). *Homemaking Education in Secondary Schools.*

In the secondary schools, all states have some requirement of home-making in Junior High School of 7th and 8th grades, with elective majors of two to three years in Senior High School, or single unit courses for students in general education.

Colleges have included Nursery Schools and Child Care Centres for observation and participation of students with children. Residence in a Home Management House, or the equivalent, have also been provided for experience in this area.

WHAT KIND OF PREPARATION DO WE HAVE IN OUR COLLEGES TO MEET THESE NEEDS, MIGHT BE ASKED

A four-year college curriculum with a B.S. degree is organized, approved, and recognized by colleges and universities for home economics. This is one of the accomplishments of fifty years of A.H.E.A. Graduate degrees are also approved in many colleges. The philosophy may be expressed in terms of M. Eunice Hilton, former Dean of the College of Home Economics at Syracuse University. She has stated a philosophy, as follows:

> We believe that study in home economics means much more than preparation for a career or a vocation. Home economics at Syracuse means a broad and comprehensive education with emphasis upon effective family living and community participation. A program that reflects this philosophy integrates two kinds of study: a basic foundation of liberal education—natural science, social science, humanities and the arts, and specialization in home economics—studies devoted to improving directly man's art of living. We believe that a curriculum should be dynamic, flexible and adaptable to the interests and needs of each student as an individual. Thus, within the general framework of basic educational requirements, there is opportunity for choice; and within the College of Home Economics, there are a number of different fields from which to select an area of major concentration.†

The Teacher Education major or sequence provides: A four-year college curriculum including liberal subjects, the arts, the humanities, related science, related art, and broad areas of home economics, with 18 to 24 hours of education courses. The following illustrates the home economics areas. The requirements met by approved home economics colleges for New York State Certification are: *

---

† From a letter of Dean Hilton to Treva E. Kauffman, October 7, 1958.

Clothing for the Individual and Family: with emphasis on psychological, economic, æsthetic, and scientific aspects of textiles and clothing. To include selection, construction, use and care. (6 semester hours, minimum requirements).

Food for the Individual and Family: with emphasis on psychological, sociological, economic, æsthetic, and scientific aspects of food and nutrition. To include production, distribution, and consumption of food as well as nutrition, meal planning, purchasing, preparation and service. (6 semester hours, minimum requirements).

The Individual and Family in the Home and Community: with emphasis on all aspects of human relations to include child and adolescent behaviour problems at various age levels (including experiences with children): family and community relations; health of the family and home care of the sick; and education for marriage and parenthood. (9 semester hours, minimum requirements).

Housing and Home Management for Individual and Family: with emphasis on the psychological, sociological, economic, æsthetic, and scientific aspects of home planning, furnishings and equipment and their effect on the individual and family. To include residence in home management house. (8 semester hours, minimum requirements).

Required Related Areas: (27 semester hours, minimum requirements)—physical and biological science with emphasis on physical, chemical and biological aspects of the home, 9 semester hours; social science with emphasis on the understanding of the development of the social and economic institutions and their effect on the individual, the family and society, 9 semester hours; art with emphasis on the individual and the home, 3 semester hours; additional hours in the above fields, 3 semester hours. Eighteen hours of Education, including Teaching Methods and Materials in Home Economics Education, 4 to 8 semester hours, and supervised student practice teaching, including conferences on teaching problems, 4 to 8 semester hours. Student teaching is developed in the public schools with selected centers of concentrated practice of a minimum of 150 hours. The background of the student is considered in the selection, as to her interest in homes and families, in community activities, and other requirements of the admissions to a college. If she has had little homemaking experience in her own home, summer experiences may be required.

---

* From *Certification for Teaching Service Bulletin*. The University of the State of New York. State Education Department of New York State.

With the demand for the college prepared home economics graduate throughout the world, much more attention should be directed to the study and research in this field, as well as interesting many more women and some men to meet this challenge.

BIBLIOGRAPHY

A. *Education Books for Teacher*

Arny, Brown Clara., *Evaluation in Home Economics*, Appleton-Century Crofts, N.Y., 1953.

Hatcher, Hazel and Andrews, Mildred E., *The Teaching of Homemaking*, Houghton Mifflin Co., Boston, 1945.

Pollard, L. Belle, *Adult Education for Homemaking*, John Wiley and Sons, NYC., 1947.

Stafford, Ivol, *A Functioning Program of Home Economics*, John Wiley and Sons, NYC., 1940.

Warren, Richard L., *Studying Your Community*, Russell Sage Foundation, New York, 1955

Williamson, Maude and Lyle, Mary, *Homemaking Education in the High School*, Appleton-Century-Crofts, NYC., 1954.

Year Books of: American Association of School Administration, 1201 Sixteenth Street, N.W., Washington, D.C. 1958-1957-1956-1955-1954-1953-1950.

A report of 1957-58 Regional Meetings.

Academically Talented—The Conference Report, James B. Conant, February 1958, N.E.A., 1201 Sixteenth Street, N.W., Washington, D.C.

What Education for Whom? Prepared by the Educational Policies Committee of the New York State Teachers Association, Albank.

B. *Books—Junior and Senior High Schools* (Some Newer ones)

Craig and Rush, *Home with Character*, Heath and Co., Boston, 1952.

Dakin and Thompson, *Simplified Nursing*, Lippincott, 1953.

Duvall and Lewis, *Family Living*, Macmillan Co., N.Y., 1955.

Fleck, Henriette, Fernandez, Louise, & Munves, Elizabeth, *Home and Family Living*, Prentice-Hall & Co., NYC., 1958.

Fitzsimmons, Cleo and White, Nell, *Management for You*, Lippincott Co., NYC., 1958.

Harris, Florence L., & Kauffman, Treva E., *Young Folks at Home*, Heath and Co., Boston, Mass., 1953.

Smart, M. S. and Smart R. C., *Living in Families*, Houghton Mifflin Co., Boston, 1958.

Jones, Ewlyn C., & Burnham, Helen A., *Junior Homemaking*, Lippincott and Co., NYC., 1958.

Lewis and others, *Family Meals and Hospitality*, Macmillan, 1955.

Lewis, Bowers and Kettunen, *Planning Clothing Construction and Wardrobe*, Macmillan Co., NYC., 1955.

Lewis, Burns, Segner, *Housing and Home Management*, Revised, Macmillan, NYC., 1958.

McDermott, Irene E., & Nicholas, Florence, W., *Homemaking for Teen-Agers*, Book I and II, 1957-1958, Bennett and Co., Peoria, Ill.

Oerke, Bess, V., *Dress*, Bennett and Co., Peoria, Ill., 1957.

Pollard, L. Belle, *Experience with Foods*, Ginn and Co., NYC., 1958.

Moore and Leahy, *You and Your Family*, Revised Edition, Heath and Co., Boston, 1953.

Ryan, Mildred G., *Sew Smartly. Dress Smartly*, Century Co., 1957.

Starr, Mary C., *Management for Better Living*, Heath & Co., Boston, Mass., 1956.

Shuey, Woods, Young, *Learning About Children*, Lippincott Co., N.Y.C., 1958.

Peterson, E., *Successful Living*, Allyn and Bacon, Inc., Boston, 1959.

Samples, M., & Rhodes, K., *Your life in your family*, Lippincott, NYC.,

Clayton, N., *Young Living*, Bennett, Peoria, Ill., 1959.

C. *For Adults—Bulletins*

Homemaking Education for Adults, The University of State of New York, State Education Department, Albany 1, N.Y. Bureau of Home Economics pamphlet.

Homemaking Education Programs for Adults, Voc. Div. Bulletin No. 268, Home Economics Education Series No. 30. U.S. Department of Health, Education and Welfare, Supt. of Documents, Washington 25, D.C.

D. *Periodicals—Journals and Magazines*

Adult Leadership.

American Association of School Administrators

ASCD Periodical and Year Books, 1201 16th St., N.W. Washington, D.C.

AVA Journal.

Better Homes and Gardens.

Educational TV, Fact Sheet and Box Score, Joint Council on Ed. T.V. 1758 Mass. Ave., N.W. Washington 6, D.C.

Good Housekeeping.

Journal of Home Economics.

Journal of Sociology.

Marriage and Family Living, National Council Family Relations.

NEA Journal.

Ladies Home Journal.

Life.

New York State Education.

McCalls.

Modern Miss.

Parents' Magazine.

Practical Home Economics.

Seventeen.

Teen Times—Journal of FHA.

The American Home.

The Forecast.

What's New in Home Economics.

Vogue.

E. *Bulletins—Leaflets—Guides*

A Series of Bulletins and Films. Money Management Institute of Household Finance, Prudential Plaza, Chicago, Ill.

Child Study Association. 132 East 74th St. NYC. A series of Leaflets on Child Guidance.

Cornell University Extension Service. College of Home Economics, Ithaca, N.Y. A Series of Bulletins on Home Economics.

New York State Education Department. Guides and Supplements of Home Economics Education.

Other State Courses of Study of Home Economics Education issued by State Education Departments.

Play Schools Association. 41 W. 57th St., NYC. Series on Child Care, Parents, Play, Family Life.

The Gifted Student in Homemaking Education. Department of Home Economics, NEA, 1201 Sixteenth St., N.W. Washington, D.C. also a series of others on Home Economics Education.

U.S. Department of Agriculture. Institute of Home Economics. Supt. of Documents. Washington, D.C. Series of Bulletins on Home Economics.

Public Affairs Pamphlets—The Family Life Series. 22 East 38th Street New York 16, New York.

AGRICULTURAL EDUCATION IN SECONDARY SCHOOLS

by Merrill K. Luther

MR. MERRILL K. LUTHER, *the author of* Agricultural Education *in Secondary Schools, specialised in the subject at the Montana State College and the Oregon State College in the U.S.A. His experience extends over a period of thirty-six years as a teacher of vocational agriculture in Montana and California, and as a supervisor of agriculture in the secondary schools of California. During 1958 he was teacher trainer and Head of the Department of Agricultural Education at the Agricultural College at Baghdad, Iraq. Mr. Luther was till recently with the Ohio State University College of Education Faculty in India acting in the capacity of a consultant in this field and worked with the department of agriculture of the multi-purpose schools and in an advisory capacity to agriculture teacher seminars.*

The author discusses here the objectives of agricultural education as they guide and affect the training of boys in the multi-purpose school. While recognising that agricultural education should have both the general and vocational objectives, the author shows that the effectiveness of this phase of education is not so much handicapped by a failure to apply the appreciation, cultural, ethical and rural citizenship objectives as it is by the failure to understand the values of, and to implement the objectives of occupational competency. In fact a failure to meet any of the objectives of agricultural education on the secondary level is often attributable to the failure to formulate and to strive to attain the objectives of learning to a doing level. With regard to the use of improved methods of teaching, the teaching of the subject on a vocational bias basis offers unique opportunities for the effective use of a variety of teaching methods in view of the variety of subject matter to be taught and practical work to be done.

A RECENT survey of agricultural students at the Jullundur Government Model Higher Secondary School revealed that all the 26 students in classes 9 and 10 wish to go on to agriculture college provided finances and grades permit. When questioned further each boy stated that if he could not attend college he would like to continue in farming after passing out. In addition, the students were equally divided in their preference for poultry farming, dairying, and land (crop) farming.

The preferences and thinking of these boys is significant. Whether or not all educators agree on the objectives of higher secondary agricultural education, at least this limited survey indicated a belief found among students generally in the schools visited in India. They feel this stream training will lead them to concrete and usable accomplishments. They feel they should have the opportunity to go into a more professional field of agriculture through advanced training in an agricultural college, and that they should be fitted as well to return to the village as farmers and cultivators. In either case their three years of agriculture on the higher secondary level should give them the fundamentals for later occupational competency.

These desires of boys now in training illustrate the objectives of occupational competency or the practical purpose of agricultural education. The education of these boys may be extended (college of agriculture) or terminal (back to the land), and it is rightly thought of as a "learning to do" training.

A belief by teachers and other educators that occupational competency is the only and final objective of the multi-purpose school training would be subject to justified doubt and criticism. We would be narrow in our philosophy and restricted in our principles if we were satisfied to stop there. In fact leading educators of India have expressed broader views on the purposes of training in the multi-purpose schools. Brief quotes from the 1953 Report of the Secondary Education Commission support both the vocational and general education objectives of agricultural education:

> "Similarly, another student may take a course in agriculture . . . because he is interested in agriculture as a most valuable human occupation and an essential part of human economy. His understanding of agriculture would certainly make him a better member of society. . . ."[1]
>
> ". . . the educational system must make its contribution to the developments of habits, attitudes, and qualities of character which will enable [India's] citizens to bear worthily the responsibilities of democratic citizenship. . . ."[2]

---

[1] *Report of the Secondary Education Commission* 1953, p. 85.

[2] Ibid. 23.

"The Secondary Education which would be the end of all formal education for the majority of citizens must assume the responsibility of providing the necessary training for this purpose."[1]

"The third main function of Secondary Education is to release the sources of creative energy in the students so that they may be able to appreciate their cultural heritage, [and] to cultivate rich interests . . ."[2]

"The special function of Secondary School, in this context, is to train persons who will be able to assume the responsibility of leadership . . . in their own small groups of community or locality."[3]

". . . The need, therefore, to educate the youth of the country to proper appreciation of the role that agriculture plays in the national economy, must be stressed in the schools . . . we recommend that all States should provide much greater opportunities for Agricultural Education in rural schools so that more students may take it and adopt it as a vocation."[4]

A prominent and highly respected American educator has stressed both the general and vocational objectives of agricultural education. The following is a condensation of his statements:

1. To increase the ability of present and prospective farmers to operate and manage a farm.
2. To contribute to the success of persons engaging in, or expecting to engage in agricultural occupations other than farming.
3. To increase the ability of present and prospective farmers to share in the ethical, recreational, and policy making life of a community.
4. To increase the ability of present and prospective farmers and their families to live happily in rural areas.
5. To increase the ability of present and prospective farmers and their families to work with other farmers and their families. for the improvement of agriculture and rural life.

---

[1] *Report of the Secondary Education Commission*, 1953, p. 24.
[2] Ibid. p. 28.
[3] Ibid. p. 29.
[4] Ibid. p. 37, 38.

6. To contribute maximally to the general aims of education.[1]

These objectives are generally acceptable to those educators interested in rural welfare. They might well become the guiding purposes of all agricultural teachers.

The effectiveness of this phase of education is not so much handicapped by a failure to apply the appreciation, cultural, ethical, and rural citizenship objectives as it is by the failure to understand the values of, and to implement the objectives of occupational competency. In fact a failure to meet any of the objectives of agricultural education on the secondary level is often attributable to the failure to formulate and to strive to attain the objectives of learning to a doing level.

These are rather bold statements. They imply certain cause and effect situations:

1. That a more thorough job will be done if vocational-bias aim guides the teacher and his superiors.
2. That purposes limited to the cultural values and appreciations of agriculture will tend to continue and to encourage "passing the external examination" as an often expressed aim and requirement.
3. That learning to a "doing level" is essential if *all* of the objectives listed by Hamlin are to be fully realized.
4. That good teaching methods and more effective learning requires that greater emphasis be put on more practice for manipulative and mental abilities.
5. That the three year course content must be fitted to the community and to the area of the state in which the school is located.
6. That local decisions as to course content, instructional materials such as student texts, teaching methods, and evaluation, are important and often essential to accomplishment of the purpose.
7. That community support for this secondary school stream can be more readily developed where concrete evidence of student accomplishment is seen and understood.
8. Although not belittling the cultural objectives of agricultural education, these implications do place special emphasis on

---

[1] Hamlin, *Agricultural Education in Community Schools.* Interstate Publications, 1950, p. 66 to 69.

the objective of occupational competency. Using this objective as a guide could well be the means of overcoming many of the problems that hinder agricultural education. It might be well, therefore, to determine what improvements might be possible if the vocational objective became the major and controlling force guiding teachers. One or two recognizable problem areas only will be discussed.

Teachers would require more training, and more effective training. It is doubtful if a higher secondary school student can reach the doing level in poultry disease recognition and control, or proper fertilization of crops, or pruning a fruit tree, unless the teacher himself is competent in the necessary abilities and skills. This consultant has too often observed that the teacher who is unable to train his students in desirable activities is the one who has failed to learn them well during his college training. These observations have support as a number of teachers have expressed this failure in their training. They state there is too much theory; that theory was paramount as the controlling force in their college examinations; and that the practical things the college students should know or do are too often presented by the professors through demonstrations and observations only, without the benefit of practice in solving decision problems or learning a manipulative skill.

We teach as we have been taught. The teacher may be well versed in theory but his secondary school student who wishes to return to the village and farming may have some difficulty putting into practice the theories he has learned. Before real mastery of the subject matter by agriculture teachers can be expected, college personnel must accept and practice the "training to a doing level" philosophy. It is quite possible that herein lies one of the fundamental weaknesses hindering successful accomplishment on the secondary level. The influence of the college on the secondary student reaches him by way of the teacher.

The teacher's mastery of his subject is only half, if the proportion may be put rather broadly, of the teacher training problem. He must be a master teacher as well as a master of his subject matter. Many agricultural teachers have had no teacher education. They have only their observation of methods used by their own secondary and college teachers. They are not always acceptable methods for any teacher and most certainly not for the agricultural teacher. Not only does he need basic education courses as offered through teacher training colleges, but he needs a course in "Special Methods in Agricultural Education", and an opportunity to do his practice teaching with secondary school agricultural students. Only with such a sound base for his teaching can this instructor use the methods and procedures which will insure the students under him the quality of training which is suggested.

If the objective of occupational competency is sincerely believed in by college people, and by secondary school personnel interested in higher secondary agriculture, it follows that the teacher, and later his students, will have a more complete and thorough course in agriculture with resulting learning standards much above those now commonly found. The cultural, leadership, citizenship, and appreciation values of the training will be enhanced, and the ability of the student will be at such a level that increased respect of his community will be his.

It follows then, that if the teacher of agriculture has as his objective the training which will fit the student to return to and improve the agriculture of his home community, he will, of necessity, have to use improved methods of teaching. He may be able to develop appreciations through a lecture method alone, a statement open to some doubt, but it will not suffice to put a competent pass out back on the farm.

Agriculture teaching on a vocational-bias basis is almost unique in the variety of teaching methods which can be effectively used, and all of which should be used in certain situations. Agriculture is varied in its subject matter, complex in the operations found in any one enterprise (sheep, potatoes, cotton,) and very concrete as to its expected results. To meet these characteristics day to day situations will arise calling for the proper teaching methods, and teaching on a high order. Lecturing, although sometimes necessary, is quite often unsuitable. A demonstration with follow-up by students may be called for. A planning session with a group of boys who wish to form a poultry co-operative may be used. Class discussions, recitations, or frequent short objective tests may constitute a method as well as an evaluation. Supervision of the individual who has a small vegetable plot at his home, supervision of class field work, chalkboard demonstrations, a film strip, and often a visit to a progressive farm for observation of a desirable farm practice are all methods that may be used from time to time. Competitive class and farm work extend the list further. There are many others used by the imaginative and well trained teacher to motivate his students and to assure learning on a doing level. A firm belief by the teacher that what the boy learns must later be used will compel him to use all these methods in an aggressive way. There are more hours of planning and preparation involved, but he will come to consider the satisfaction and pleasure of seeing real results a just reward for his efforts. It can safely be promised that good training will not come through the lecture method alone.

This article has dealt almost entirely with the objectives of agricultural education as they guide and affect the training of boys in the multi-purpose school. It must of necessity be the only place to start if we wish to develop a sound philosophy and if we are anxious to know where we are going and what we should accomplish. With all due respect to Christopher Columbus, who discovered America, one may justly feel that he was lucky. He didn't know where he was going when he left, he did not know what he had found when he got there, and he couldn't tell where he had been when he got back! Let us not use him as an example as we seek to develop and improve the multi-purpose stream of agricultural education. Let us be sure we know our aims and where they are to lead us.